

A HEALTH PROVIDER NUTRITION EDUCATION INITIATIVE FOR OBESE ADULTS

by

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Dedication

I would like to dedicate this paper to my loving husband, wonderful family members and friends who all have supported, encouraged and motivated me along this journey.

Abstract

Current statistics and trends for obesity shed light on the overall impact obesity has. Obesity is a global epidemic. This project highlighted the importance of providing nutrition education on the Mediterranean diet to obese adults and how to accomplish it efficiently. The project was implemented in a primary care clinic that lacked a formal and efficient method to provide obese adults with the necessary nutrition education. Over twelve weeks, the plan-study-do act cycle was utilized in this quality improvement project to increase the value and frequency of nutrition education being provided to obese adults that presented to this clinic for their annual exam. By the end of this time frame, the healthcare providers increased the provision of nutrition education to obese adults from 27% of the time to 82.6%. This project facilitated a practice change by translating evidence-based research into clinical practice.

Key words: Mediterranean style diet, nutrition education, obesity, organizational change

Table of Contents

Acknowledgments.....	2
Dedication	3
Abstract	4
Chapter One: Overview of the Problem of Interest	10
Background Information	10
Significance of Clinical Problem	11
Question Guiding Inquiry (PICO)	11
Population	11
Intervention	12
Comparison	12
Outcome	12
Summary	12
Chapter Two: Review of the Literature Evidence	13
Methodology	13
Sampling strategies	13
Evaluation criteria	13
Literature Review Findings.....	14
Limitations of Literature Review Process.....	18
Discussion	18
Conclusions of findings	18
Advantages and disadvantages of findings	19
Utilization of findings in practice	19

Summary	20
Chapter Three: Theory and Concept Model for Evidence-based Practice	21
Concept Analysis	21
Theoretical Framework	21
Application to practice change.....	22
Evidence-Based Practice Change Theory	23
Application to practice change.....	24
Summary	24
Chapter Four: Pre-implementation Plan	26
Project Purpose	26
Project Management	26
Organizational readiness for change	28
Inter-professional collaboration	28
Organizational approval process.....	29
Information technology.....	29
Cost Analysis of Materials Needed for Project.....	29
Plans for Institutional Review Board Approval.....	30
Plan for Project Evaluation	30
Demographics	30
Outcome measurement.....	30
Data management.....	31
Summary	31
Chapter Five: Implementation Process	32

Setting	32
Participants.....	32
Recruitment.....	33
Implementation Process	34
Plan Variation	38
Summary	39
Chapter Six: Evaluation of the Practice Change Initiative	41
Participant Demographics.....	41
Table 1 Participant Demographics: Age (years).....	42
Table 2 Participant Demographics: Body Mass Index (BMI)	42
Intended Outcome.....	43
Findings.....	43
Figure 1	44
Summary	44
Chapter Seven: Implications for Nursing Practice.....	45
Practice Implications.....	45
Essential I: Scientific underpinnings for practice	45
Essential II: Organization and systems leadership for quality improvement and systems thinking	46
Essential III: Clinical scholarship and analytical methods for EBP	47
Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare.....	47
Essential V: Healthcare policy for advocacy in healthcare	48
Essential VI: Interprofessional collaboration for improving patient and population health outcomes.....	49

Essential VII: Clinical prevention and population health for improving the nation's health	50
Essential VIII: Advanced nursing practice	50
Summary	51
Chapter Eight: Final Conclusions	52
Significance of Findings	52
Project Strengths and Limitations	52
Project Benefits	53
Recommendations for Practice	53
Final Summary	53
References	55
Appendix A: Literature Review Matrix	60
Appendix B: Literature Search Strategy Log	64
Appendix C: Education on the Mediterranean Diet	65
Appendix D: Healthy Eating Suggestions	66
Appendix E: Mediterranean diet grocery shopping list	67
Appendix F: Recipe Samples	68
Appendix G: Instructions on reading nutrition labels	69
Appendix H: Food Diary Template	70
Appendix I: Process of Implementation	71
Appendix J: DNP QI Project Budget	72
Appendix K: DNP QI Project Data Collection Tool	73
Appendix L: Approved Project Evaluation Form	74
Appendix M: Approved ECU IRB Letter	75

Appendix N: Integrative Physicians Site Approval Letter	77
Appendix O: Site Champion Agreement Letter.....	78
Appendix P: IP Healthcare Provider Script	79
Appendix Q: Project Site Staff Educational Power-point.....	80
Appendix R: Baseline patient chart audit results	83
Appendix S: First biweekly patient chart audit results	86
Appendix T: Second biweekly patient chart audit results	87
Appendix U: Third Biweekly Patient Chart Audit Results and Meeting Minutes	88
Appendix V: Fourth Biweekly Patient Chart Audit Results and Meeting Minutes.....	89
Appendix W: Baseline chart audit comparison to Overall chart audit average	90
Appendix X: DNP QI Project Provider Evaluation Form	91

Chapter One: Overview of the Problem of Interest

The phrase “bigger is better” is a commonly used phrase in the United States (U.S.). This phrase can be applied to almost every facet of life, including salary, home, car and even meals. But what about weight? The worldview that is influenced by this phrase may lead individuals to gain a substantial amount of weight. Over time this may lead to obesity, especially in adulthood. The purpose of this chapter is to discuss background information relevant to obesity, highlight the implication of nutrition education for obese adults, and outline the Doctor of Nursing Practice (DNP) Quality Improvement (QI) project.

Background Information

More than one-third, or 36.5%, of U.S. adults are obese (Centers for Disease Control and Prevention [CDC], 2018). Obesity influences the development of multiple medical conditions. Obesity-related conditions include heart disease, stroke, type 2 diabetes, and certain types of cancer, which are some of the leading causes of preventable death (CDC, 2018). In turn, with increased medical conditions there is increased cost for individuals and the U.S. government. In the U.S., estimated annual medical cost of obesity was \$147 billion in 2008; medical costs for people who had obesity were \$1,429 higher than people who had normal weight (CDC, 2018). Obesity results in healthcare and financial strain on individuals.

Obesity also has a global impact. In 2014, more than 2.1 billion people, roughly 30% of the global population, were overweight or obese and 5% of deaths worldwide were attributed to obesity (Dobbs et al., 2014). If weight trends continue, almost half of the world’s adult population will be overweight or obese by 2030 (Dobbs et al., 2014). Besides excess health care expenditure, obesity also results in lower productivity and slows economic growth as a result of

lost work days, mortality and permanent disability (Tremmel, Gerdtham, Nilsson & Saha, 2017). Obesity is a condition that disrupts many areas of an individuals' life.

There is an urgent need for quality improvement initiatives for obesity management and prevention. The impact of obesity suggests that if trends continue, higher rates of obesity, of higher prevalence of preventable medical conditions, of mortality, and medical costs. Continued decline in health status, negatively impacts individuals, families, communities, and the nation.

Significance of Clinical Problem

The DNP QI project will be conducted at Integrative Physicians (IP), a primary care clinic in Durham, North Carolina. The IP healthcare providers stated that they served a vast population of obese adults but lacked any formal method for communicating nutrition education.

Obesity is a major public health problem in Durham County. The percentage of adults who have obesity was 29% in 2013 (NCIOM, 2013). Another source reported that 65% of adults were overweight or obese in Durham County (NCHHS, 2014). In addition, one in four overweight or obese adults don't believe they have a problem (NCHHS, 2014). Overweight and obesity rates in Durham County increase from childhood to adulthood (NCHHS, 2014). This DNP QI project will address the problem of adult patients with body mass index's (BMI) at or greater than 30 who do not have documented evidence of nutrition education.

Question Guiding Inquiry (PICO)

Population. The primary population for the DNP QI project will be the medical staff at IP clinic. The medical staff consists of one family nurse practitioner (FNP), one physician assistant (PA), two medical doctors (MD) and three medical assistants (MA). The FNP, PA, and MDs will be referred to as healthcare providers (HCP). The target population are English

speaking adults over age 18 years who are categorized as obese with BMIs greater than or equal to 30 that present to IP for an annual physical exam or to establish care.

Intervention. The projects intervention is to give the IP HCPs an established efficient process to manage obese adults through nutrition education. The source of nutrition education will be a nutrition education toolkit for HCPs they instruct adults over age 18 years with BMIs greater than 30.

Comparison. To gain understanding of the problem it must be evaluated. This project's problem is a high percentage of obese patients that have no evidence of nutrition education. There will be a pre-project implementation patient chart review to establish IP's baseline percentage of how many obese adults receive nutrition education. This number will later be compared to the post-project implementation results to evaluate for change.

Outcome. The method's efficacy will be determined by three main points: nutrition education given with resources, increased HCPs documentation on patient charts of ICD-10 code E66.9 for obesity and dietary counseling and surveillance ICD-10 code Z71.3 (ICD10Data, 2018). This will be measured by the number of patient charts in which HCPs document all three items: appropriate obesity ICD-10 code, dietary counseling ICD-10 code, and documentation of nutrition education.

Summary

Obesity affects people individually as well as globally. Significance of the clinical problem was emphasized and the need for QI in the IP clinic was explained. Nutrition education for obese adults was outlined in the DNP QI project as well. Now that the clinical problem has been defined, evidence-based research is needed to identify an appropriate solution.

Chapter Two: Review of the Literature

The purpose of this review of literature is to present evidence that supports provider-initiated obesity nutrition education on the Mediterranean style diet. The DNP QI project identified the gap in knowledge exchange between IP HCPs and obese adults who present to the clinic. IP currently lacks any formal method for consistently and efficiently communicating nutrition education to obese adults. Desired project outcome is that the practices' s HCPs have an efficient process to manage obese adults through nutrition education.

Methodology

Sampling strategies. Specific literature search strategies were used to find relevant information. The literature search strategy log for this DNP QI project is located in Appendix B. This log presents details of search strategies with key words and search terms to ensure transparency of the search. A systematic search identified pertinent articles published in databases from January of 2013 to July of 2018. There were many of articles that meet the search criteria but only a few were relevant to the DNP QI project. The two primary databases used were CINAHL (EBSCOhost) and PubMed (NCBI). Literature search used the inclusion criteria of obese adults and nutrition education. The key words used in the literature review search were obesity, Mediterranean diet, nutrition education, patient education, obesity cost, body mass index and plan-study-do-act. Each search had time limits of five years or less and matched key search terms. A total of 20 articles that specifically addressed the project's purpose were included. Duplicate articles and articles that did not address obesity or nutrition education were excluded.

Evaluation criteria. The evidence matrix, depicted in Appendix A, summarizes relevant articles that contain key data found in the literature review. The table lists every article that contained relevant data, level of evidence for each article, data outcomes, and specifies how the

article will be used in the DNP QI project. The evidence matrix only includes articles and data that support the DNP QI project. Randomized control trials, meta-analysis', cohort studies and systematic reviews included in the literature findings. The literature review included articles with evidence levels 1- 5 with the majority being level 1 and 4. The major strengths of the articles were that they addressed obesity and provided a possible solution.

Selected studies addressed the following criteria: (1) obesity; (2) nutrition education; (3) the Mediterranean style diet and the benefits of adherence; (4) the cost of obesity; and (5) the research findings were presented in English in a peer-reviewed journal. Excluded had the following characteristics: (1) addressed obesity in children less than 18 years old and pregnant women but not adult obesity; (2) did not present nutrition education as a potential solution; or (3) did not present the study findings in English.

Literature Review Findings

The method of literature review for this DNP QI project examined databases, journals, and books to develop a list of relevant material. The initial search aimed to define the significance of obesity's monetary burden. A systematic review of approximately 2,044 medium to high quality level articles was completed to assess the economic burden of adult obesity confirmed that obesity absorbs a vast amount of health-care resources (Specchia et al., 2015). The researchers concluded that further research is needed to find and promote public health strategies that combat obesity (Specchia et al., 2015).

A second systematic review reached a similar conclusion. This review reported findings from twenty-three studies that indicated obesity's economic burden among both developed and developing countries, which led to the conclusion that public health initiatives must prevent obesity to preserve societal financial resources (Tremmel et al., 2017). The researchers compared

the annual direct costs per capita in two U.S. based studies and found an estimated increase per capita from \$2741 in 2005 to \$6899 in 2011 (Tremmel et al., 2017). The overall results of the review determined that obesity rates continue to rise amongst the world's adult population and if this pervasiveness continues, consequently the costs attributable to obesity will increase as well (Tremmel et al., 2017).

After the significance of obesity was established, further research was focused on potential solutions to combat obesity and promote healthier dietary habits. It is well known that there are many beneficial effects of fruit and vegetable consumption on weight and decreasing the risk for chronic disease. A recent article highlighted how nutrition education was helpful in improving the consumption frequency of antioxidant-rich fruits and vegetables among overweight and obese adults (Wagner, Rhee, Honrath, Blodgett Salafia & Terbizan, 2016). It has also been said that adequate nutrition offers one of the most effective and least costly ways to decrease the burden of many diseases and their associated risk factors, such as obesity (Ohlhorst et al., 2013). Proper nutrition education is essential for health promotion.

Healthcare providers such as nurse practitioners, physician assistants and physicians all share the obligation to provide quality health education. An article discussing the importance of improving health outcomes through patient education emphasized that it is the responsibility of HCPs to proactively enable patients to have more available interactions and situations that promote health and well-being (Paterick, Patel, Tajik & Chandrasekaran, 2017). Patient health literacy is vital to provide illness prevention measures of exercise and diet since having a deep understanding of healthy interventions directly impacts patient health in the present and long-term (Paterick et al., 2017). The author wrote that HCPs must educate patients in order to see behavioral changes that results in better health outcomes (Paterick et al., 2017). Such as and

reduced morbidity and mortality due to preventable chronic diseases such as diabetes, obesity, and coronary and cerebrovascular disease (Paterick et al., 2017). All HCPs are responsible for educating patients on how to achieve health and wellness. The use of food diaries, activity records, and self-weighing are ways of self-monitoring, which is one of the elements of a successful behavioral weight loss program (Perreault, 2017).

Many scholarly articles provide strong evidence on the association between adherence to a Mediterranean style diet (MSD) and health promotion. The MSD has been widely reported to be associated with a favorable health outcome and a better quality of life (Sofi, Macchi, Abbate, Gensini & Casini, 2014). A recent systematic review of randomized controlled trials (RCTs) was conducted and determined that the use of the MSD for weight loss resulted in greater weight loss than most low-fat diets at greater than or equal to 12 months (Mancini, Filion, Atallah & Eisenberg, 2016). In a interventional trial individuals who were randomly assigned to the MSD lost a mean weight of 4.4 kg (Matarese & Pories, 2014). In addition, a randomized clinical trial involving telephone counselling on the MSD found a statistical significant amount of weight loss, in addition to an increase in fruit and vegetable intake of approximately eight servings per day after 6 months (Sidahmed et al., 2014). This allowed researchers to conclude that education on the MSD was useful for both improving diet quality and for achieving a modest weight loss in overweight or obese individuals (Sidahmed et al., 2014).

The Mediterranean style diet (MSD) refers to a dietary pattern that is common in olive-growing areas of the Mediterranean that encompasses countries in southern Europe, the Levant and north Africa (Perreault, 2017). The most common components of the MSD include a high level of monounsaturated fat, moderate consumption of alcohol (red wine), a high consumption of vegetables, fruits, legumes, and grains (Perreault, 2017). In addition, a moderate consumption

of milk, dairy products and a relatively low intake of red meat and processed meat products (Perreault, 2017). The MSD has been shown to reduce body weight, be nutritionally balanced and not restrictive, and is rich in foods that are high in antioxidants (Matarese & Pories, 2014).

Providing nutrition education alongside MSD information results in a higher adherence to a MSD with lower prevalence of obesity (Bonaccio et al., 2013). Another study added that being of female gender and older than 62 years were factors associated with improved MSD adherence (Patino-Alonso et al., 2014). Researchers conducted a recent cohort study that investigated the association between the MSD and health status, by proposing a literature-based adherence score to the MSD (Sofi et al., 2014). They found the MSD to be a healthy dietary pattern in relation to morbidity and mortality, as evidence by an 8 % decrease of overall mortality, a 10 % decreased risk of Cardiovascular disease, and a 4 % decrease in neoplastic disease (Sofi et al., 2014).

The MSD has additional health benefits as well. A proliferative increase in evidence has demonstrated that the traditional MSD is likely to be the ideal dietary pattern for the prevention of cardiovascular disease (Martínez-González, 2016). Researchers provided measures of population impact in cardiovascular prevention and estimated that 19,375 cases of cardiovascular death would be prevented each year by promoting the MSD (Martínez-González, 2016). An experimental study was conducted to explore the effects of education sessions on the MSD and an exercise program in changing eating behaviors, body composition and abdominal fat (Noites et al., 2015). The MSD was shown to reduce carbohydrate and saturated fat intake, in turn reducing fat mass (Noites et al., 2015). Also, recent evidence suggests that adopting a MSD may help prevent type 2 diabetes, in addition to providing HbA1c reduction in persons with known diabetes (Esposito & Giugliano, 2014). The HCP nutrition education will incorporate the MSD.

Limitations of Literature Review Process

In literature review, limitations must always be considered. A limitation of some of the studies were the specificity of the participant population. Some participants were at increased risk for colon cancer, were post- surgical patients, or diabetic. Persons who were at risk for disease or have already been diagnosed might be more motivated to adhere to the MSD than the general population. The generalizability of some study results to the general population of overweight or obese individuals trying to lose weight is unclear in some studies. There were a few studies that were weak in the sense that they relied on self-report for dietary assessments, had a short time frame of intervention, no control group, and small sample sizes. Another limitation of some study reviews was that only a few databases were utilized, possibly limiting the number of potentially eligible studies.

Discussion

A strategic literature review was conducted to compile needed evidence regarding the impact of obesity and the benefits of providing MSD nutrition education. Key issues to highlight when addressing obesity are the impact it has on cost as well as its impact on causing and exacerbating chronic disease. These issues helped guide the research on this topic.

The cost of obesity is reflected in monetary value as well as loss of productivity. A solution to combat obesity is with nutrition education. Nutrition education has been proven to directly affect diet. Primary HCPs play a pivotal role in providing nutrition education because they directly interact with individuals who need it the most, obese adults. HCPs can provide an even greater impact if they deliver nutrition education that incorporates the MSD.

Conclusion of findings. The literature review underlined important evidence to support the intervention of the DNP QI project. The literature emphasized the financial strain of obesity

and the need to implement solutions. A common thread among the literature findings is that the MSD influences healthier eating behaviors, prevents chronic disease, manages chronic disease, decreases morbidity and mortality, in addition to promoting weight loss. These factors heavily benefit obese adults.

Advantages and disadvantages of findings. An advantage of the literature search was that the evidence supported HCP led nutrition education. The evidence supported the incorporation of the MSD as a part of the desired nutrition education. The evidence also supported that the MSD has been shown to reduce body weight, be nutritionally balanced and beneficial for overall health promotion. In addition, the relevant articles did support the urgent need for quality improvement for obese adults.

There were a few disadvantages noted during the literature review. For example, one systematic review lacked uniformity in their data concerning the same food group meaning some studies reported potatoes together with vegetables, while others include them as a single food group (Sofi et al., 2014). Another systematic review included studies that focused on the current economic effects of obesity but did not assess its long-term effects (Specchia et al., 2015). Additional examples of the disadvantages of the trials and studies reviewed were mostly related to the variability in participant compliance, the location of where the study was performed and the heterogeneity of the study participants.

Utilization of findings in practice. The project intervention would be translated into the targeted practice environment through the implementation of a sustainable method of nutrition education. The nutrition education toolkit will be easily accessible by the HCP staff which will promote efficiency. The toolkit will be composed of education on the Mediterranean diet (Appendix C), healthy eating suggestions (Appendix D), a Mediterranean diet grocery shopping

list (Appendix E), recipe samples (Appendix F), instructions on reading nutrition labels (Appendix G) and a blank food diary template (Appendix H) to help patient's track what they are eating. The evidence supports this nutrition education toolkit to be used as a formal method of providing nutrition education to obese adults. The major components of this toolkit will be information derived from evidence-based research and reputable national organizations such as the CDC.

Summary

This chapter discussed the literature review process, significance of nutrition education, the role HCPs play and the source of nutrition education for the DNP QI Project. The method of implementing the DNP QI project requires an evidence-based literature review to support the intervention in the project. The literature provided extensive support of the clinical problem, significance of nutrition education, benefits of the MSD and the overall impact of obesity. After completing the literature review and finding the evidence to support the DNP QI project, the next focus is to incorporate theory and concept analysis.

Chapter Three: Theory and Concept Model for Evidence-based Practice

Exploring obesity in relation to concepts and theories is multifaceted. Reviewing obesity from a conceptual and theoretical perspective will provide a greater understanding of the problem, which may lead to a more succinct solution. This section will delve into the concept of obesity and how the Health Promotion Model and Kurt Lewin's change theory will assist in the implementation of the DNP QI project.

Concept Analysis

The key concepts discussed in the DNP QI project include obesity and nutrition education. The label of being overweight and obese are defined as abnormal or excessive fat accumulation that presents a risk to health (World Health Organization [WHO], 2017). When your weight is higher than what is considered as a healthy weight for a given height you are considered overweight or obese. BMI is a person's weight in kilograms divided by the square of his or her height in meters and is used as a screening tool for overweight or obesity (CDC, 2016). Individuals with a BMI of 30 or more is generally considered obese. Researchers has shown that the foundation of obesity treatment is been diet and exercise (Matarese & Pories, 2014). The DNP QI project focuses on promoting a healthier weight through dietary changes.

Theoretical Framework

The Health Promotion Model (HPM), developed by Nola J. Pender, will serve as the theoretical framework for the DNP QI project. This model is one of the most comprehensive and predictive patterns of health promotion behaviors, which provides theoretical framework for discovering effective factors on health promoting behavior (Kamran, Azadbakht, Sharifirad, Mahaki & Mohebi, 2015). It has been considered as a framework for explaining the lifestyle behaviors promoting health (Kamran et al., 2015). This model was chosen because it focuses on

disease prevention, health promotion and describes how providers can motivate patients toward achieving their desired healthy outcomes.

The HPM is a middle-range integrative theory since it portrays the multidimensionality of persons interacting with their interpersonal and physical environments as they pursue health while integrating constructs from expectancy-value theory and social cognitive theory with a nursing perspective of holistic human functioning (Butts & Rich, 2017). Pender's HPM includes three major categories: (1) individual characteristics and experiences, (2) behavior-specific cognitions and effect, and (3) behavioral outcome (Butts & Rich, 2017). Pender explains this model as a framework and a guide for discovering complex psychological processes, which motivates individuals to change their behavior, and leads them to promotion of health and hygiene (Kamran et al., 2015).

Application to practice change. Pender's HPM can be applied to the DNP QI practice change. The primary goal of the project is to establish an efficient but comprehensive method of providing obese adults with needed nutrition education. HPM highlights that prior behavior has both direct and indirect effects on the likelihood of engaging in health-promoting behaviors (Butts & Rich, 2017). In the primary care setting, providers have the opportunity to build great relationships with many patients. The HCP at IP can use the rapport they have built to help patients evaluate their prior behaviors and how those behaviors can affect their ability to make a change that can lead to a healthier weight. For example, a prior behavior may include choosing a meal that incorporates fried foods instead of grilled. The provider may help them change this behavior by providing them with examples of healthier food choices.

Evidence-Based Practice Change Theory

There are many theories that were developed to explain the process of change within organizations. Kurt Lewin was a behavioral scientist that developed a force field model for change in the 1940's (Butts & Rich, 2017). In his model, it states that change is an active force within an organization that moves in opposing directions (Butts & Rich, 2017). Lewin believed that the examination of these forces would allow health practitioners to understand why groups act as they do and what forces would need to be lessened or strengthened to bring about planned change (Batras, Duff & Smith, 2016). The driving force moves participants toward change, while participants use a restraining force to push back the change being sent their way (Butts & Rich, 2017). Lewin's model is a balance of these two forces (Butts & Rich, 2017). Lewin wrote about group dynamics because he believed that individuals are influenced by group norms and pressures to conform, such that, group behavior should be the primary target for change (Batras, Duff & Smith, 2016). Lewin noted that group decision-making is powerful when trying to implement lasting behavioral change among group members (Batras et al., 2016).

The HCPs at IP were interviewed for potential force of reasons that would promote change or delay it. Lewin's Force Field Model involved three steps, unfreezing, moving or change, and refreezing (Butts & Rich, 2017). Unfreezing is the act of dismantling or unlearning old behaviors (Butts & Rich, 2017). Unfreezing involves creating dissatisfaction with the status quo to make the realization that the potential benefits of change outweigh the potential negatives associated with the process (Batras et al., 2016). The moving or change phase pushes individuals to change to more acceptable behaviors (Butts & Rich, 2017). Moving is the implementation phase of change that involves research, action, and learning, which may lead to redesigning roles and responsibilities (Batras et al., 2016). Refreezing involves a return to the dynamic force field

and a new semi-stationary state of equilibrium (Butts & Rich, 2017). Refreezing includes the establishment of new organizational norms, culture, practices and policies in order to facilitate long term change (Batras et al., 2016). These three phases were applied the process of change that the DNP QI project promoted.

Application to practice change.

The purpose of the Doctor of Nursing Practice Quality Improvement project is to determine if a nutrition education toolkit, introduced by the healthcare provider (HCP), will be an efficient method to increase the frequency of HCP lead nutrition education amongst adults older than age 18 years with body mass index's greater than 30. The process of unfreezing will involve helping the HCPs, at the primary care clinic, to reflect on their current process of providing nutrition education to obese adults. The next step is to help them to come to the realization of the potential benefits of implementing this quality improvement (QI) initiative, and how those benefits will outweigh the potential negatives associated with the process.

The change or moving phase was implemented next. Throughout the implementation process, there will be several meetings with the HCPs incorporating the plan-study-do-act (PDSA) model. This will help facilitate communication of the pros and cons of the implementation process, while simultaneously incorporating necessary changes. By the end of the implementation phase, the HCPs have established a new process for providing nutrition education to obese adults. A newly established process of educating obese adults signifies the refreezing phase.

Summary

The HPM and Lewin's change theory was introduced, and their importance was outlined. The HPM was chosen because it is one of the most comprehensive and predictive patterns of

health promotion behaviors. This model provides theoretical framework for discovering effective factors on health promoting behavior. Kurt Lewin's evidence-based change theory outlined the phases of change that needed to be facilitated at IP for the behavioral change, being promoted by the DNP QI project, to occur. The next chapter will highlight the pre-implementation planning process.

Chapter Four: Pre-implementation Planning

There are many details that are involved in the pre-implementation process. During this process, approval to officially implement this project had to be obtained from both the project site as well as East Carolina University (ECU). This section highlights the process of securing the project site, the HCPs involved and the details of how the project will be implemented.

Project Purpose

The purpose of the DNP QI project is to determine if a nutrition education toolkit, introduced by the HCP, will be an efficient method to increase the frequency of HCP lead nutrition education amongst adults over age 18 years with BMIs greater than 30. The efficacy of this method will be determined by three main points: nutrition education provided with resources given, an increase in HCPs adding to patient charts documentation of ICD-10 code E66.9 for obesity as a diagnosis as well as the dietary counseling and surveillance ICD-10 code Z71.3 (ICD10Data, 2018). This will be measured by how many patients charts the HCP documents all three of the following: the appropriate obesity ICD-10 code, dietary counseling ICD-10 code and documentation of nutrition education provided. The desired overall outcome of this project will be that the HCPs at this practice have an established efficient process for how they manage obese adults through addressing obesity with nutrition education.

Project Management

The target population requiring nutrition education are adults over age 18 years that are categorized as obese with BMI's greater than or equal to 30 who present to IP for an annual physical exam or to establish care. This process starts on August 21, 2018 by conducting a pre-project implementation patient chart review. A specifically-designed form will be utilized to collect descriptive patient data such as patient age and BMI. This information will be collected to

determine which individuals meet the criteria for the target population. A total of 300 patient charts from March thru August of 2018, with documented age, height, weight and BMI, will be selected in accordance with IP's estimated patient population. From this subset, 100 patient charts will be randomly selected by choosing every third name on the list of 300. The purpose of this pre-project implementation patient review is to establish a baseline of how often the practice HCP's are documenting the ICD-10 codes E66.9 and Z71.3 as well as evidence of nutrition education provided in charts for adults over age 18 years with BMI's greater than or equal to 30. During the entire data collection process, patient privacy will be protected by making the information collected anonymous.

On August 30, 2018, the first meeting with IP staff will be held during lunch to introduce the DNP QI project and initiate the Plan-do-study-act (PDSA) cycle. During this lunch meeting, the staff will be provided with a Mediterranean style lunch, a sample draft of the nutrition education toolkit and a power-point presentation explanation of the DNP QI project (Appendix Q). After discussing the plans of implementation, trying what was planned and observing the results, action will be taken on improving the process each meeting.

The project implementation stage will be the next step. At this point, IP HCPs will begin using the nutrition education toolkit to educate each obese adult patient that presents to the clinic for an annual physical exam or to establish care. On September 6, 2018, concurrent post-project implementation patient chart audits will begin and continue on a biweekly basis. The patient charts that will be selected are all patients that fit the target population criteria that visited IP in each two-week time frame. The post-project implementation patient chart audits will evaluate how often the practice HCP's are documenting the ICD-10 codes E66.9 and Z71.3 as well as nutrition education in charts for the target population. The data collection instrument used will be

a form displaying a section labeled obesity ICD-10 code, dietary counseling ICD-10 code and nutrition education provided with the corresponding yes or no response. On September 18, 2018 the initial biweekly meeting with IP staff will be held to discuss the findings of the concurrent chart audits. There will be a total of four biweekly meetings with the IP staff incorporating the PDSA cycle. Meeting minutes will reflect each topic discussed to ensure accurate record keeping.

On November 12, 2018, the final meeting with IP staff will be conducted to complete the final project discussion, evaluation and plan. The project's usefulness will be evaluated by whether there was an increase, decrease or no change in the frequency of the HCPs addressing obesity with obese adults through nutrition education. This will be measured by how many patients charts the HCP documents all three of the following: the appropriate obesity ICD-10 code, dietary counseling ICD-10 code and documentation of nutrition education provided.

Organizational readiness for change. In a meeting with IP HCPs, it was established that IP served an immense population of obese adults but lack any formal method for communicating nutrition education. The DNP QI project will address the problem that there is a large population of adult patients with BMIs greater than 30 that do not have documented evidence of nutrition education. The HCPs all desire to have a consistent and efficient process of providing nutrition education.

Inter-professional collaboration. The primary population for the DNP QI project will be the medical staff at IP clinic. The medical staff consists of an FNP, PA, two MDs, and three MAs. The HCPs will be responsible for providing the nutrition education to the patients. The three MAs we be responsible for obtaining and documenting patient age, height and weight into

the electronic medical record. The BMI will be automatically calculated by the electronic medical record.

Organizational approval process. The process for organizational approval was accomplished with several phone conferences and email conversations. The leaders of IP agreed to be a part of the DNP QI project because it addressed a concern that a large proportion of their patients face (Appendix N and Appendix O). The leaders wanted to incorporate a process that would impact their patients on a large scale.

Information technology. This DNP QI project will be sustained with the use of a HCP script, nutrition education toolkit online template and the added benefit of practice reimbursement. With the HCPs input, a four-sentence script will be developed describing what is in the nutrition education toolkit and the benefits of using it (Appendix P). The nutrition education toolkit will be a template up loadable to the practice's electronic medical record. This will provide a customizable framework for providing nutrition education. An online template increases accessibility to update and distribute resources, hardwiring this process into permanent practice.

Cost Analysis of Materials Needed for Project

In implementing this DNP QI project, an adequate budget will be necessary. An operational budget was developed to determine the expenses related to creating the nutrition education toolkit and integrating it into the practice (Appendix J). The budget was divided into cost related to administrative items, food and travel. The administrative costs included supplies, printing, project promotional items and gifts for the HCPs involved. Items such as paper, pens, toolkit folders and ink are included in the administrative cost. In order to facilitate buy-in amongst the practice staff, a meal will be provided. The travel expenses for this project will be

primarily spent on gas. For example, the projected monetary amount listed on the budget was calculated based on approximately 20 trips to the practice, 15 miles round trip, at 0.55 cents per mile is approximately \$165 (IRS, 2018).

Plans for Institutional Review Board Approval

IP has deemed this project as quality improvement and not requiring Institutional Review Board (IRB) approval. The DNP QI project was evaluated and approved by the College of Nursing (Appendix L). IRB approval is required and has been obtained from ECU (Appendix M). All project documents have been uploaded and submitted to the ECU IRB and it has been verified that this project is not human research.

Plan for Project Evaluation

Demographics. The demographics for the patients involved in the project will be collected via chart reviews. A specifically-designed form will be utilized to collect descriptive patient data such as patient age, BMI and whether the patient has documented nutrition education. An example of the data collection tool is presented in Appendix K. This information will be collected to determine which individuals meet the criteria for the target population. The demographic data will be reported as a mean with the range of participants aging from 18 to 65 years old. This data will be presented in a table format.

Outcome measurement. The project methods include conducting a pre-project implementation patient chart review to establish a baseline of how many obese adults are receiving nutrition education. Biweekly meetings with the staff and concurrent patient chart reviews will occur on four separate occasions. After this is completed, there will be a post-implementation patient chart review to assess overall changes in the prevalence of documented nutrition education for obese adults. This will be measured by how many patients charts the HCP

documents all three of the following: the appropriate obesity ICD-10 code, dietary counseling ICD-10 code and documentation of nutrition education provided. The benchmark goal will be to have 100% compliance on 100 patient charts. This will mean that an efficient process of providing nutrition education to obese adults has been established at IP.

Data management. The data collected will be managed and stored electronically via pirate drive. The data will be kept for one year and then deleted. There will be no use of hard copies or paper documentation.

Summary

This section highlighted the process of preparing to implement the DNP QI project. After obtaining project approval from ECU and IP the pre-implementation process must be outlined. Each step must be mentioned, and every minute detail must be thoroughly evaluated. In summary, there will be a baseline chart audit to solidify the significance of implementing this project at IP, the staff will be educated on the findings of this audit and the solution is provided by the QI project. Then the project will be implemented. There will be biweekly meetings discussing the nutrition education toolkit in order to promote consistency, sustainability and efficiency. The meeting will be for all staff to discuss chart audit results, pros and cons of the nutrition education toolkit and improvements will be made based on suggestions. There will be four meetings, in addition to a final project evaluation meeting. The goal is to hardwire this project into practice so that the HCPs of IP will have a consistent and efficient process of providing nutrition education to obese adults. The next chapter will outline the process of implementing the QI project at IP.

Chapter Five: Implementation Process

The implementation phase of the quality improvement (QI) project provided the opportunity to put all the project plans into action. This chapter will outline the details of the QI project such as the kind of setting, the type of participants, how they were recruited and how the project was implemented. As discussed in the previous chapter, the project was implemented after the baseline chart audit was complete. The staff was then educated on its findings and how the QI project would provide a solution to the clinical problem of the lack of nutrition education amongst obese adults.

Setting

The data for this QI project was collected from IP. IP is a local, privately owned, primary care practice in Durham, North Carolina. As highlighted in earlier chapters, obesity is a major public health problem in Durham and obesity rates continue to rise across all ages, genders and racial-ethnic groups. “IP approximately serves six hundred patients, with 75% of them being between the ages of 18 and 65 years old” (J. Lehr, personal communication, July 20, 2018). Approximately, “65% of those individuals are overweight or obese” (J. Lehr, personal communication, July 20, 2018). This demographic information made IP an ideal setting for this QI initiative.

Participants

The primary population for the DNP QI project were the HCPs at IP primary care clinic. The HCPs consisted of one family nurse practitioner (FNP), one physician assistant (PA), two medical doctors (MDs) and three medical assistants (MAs). The DNP QI project’s desired outcome of implementing an efficient process to provide nutrition education to obese adults directly impacted the HCPs. The target population requiring nutrition education included only

English-speaking adults between the ages of 18 and 65 years that are categorized as obese with BMI's greater than or equal to 30. The inclusion criteria for the participants in this project were all obese adults that presented to IP for their annual physical exam or to establish care, who were between the age of 18 and 65 that spoke English. Therefore, 1) all non-English speaking patients; 2) who were not obese; 3) younger than 18 and older than 65 years old; 4) that did not present for their annual physical exam or to establish care were excluded. The attributes of the participants such as gender, age, racial or ethnic group, marital status, socioeconomic status, medical co-morbidities, and level of education varied amongst participants. The hope was that the participants in this project were exposed to information that may change their mindset about eating healthier which may help them to move toward a healthier weight.

Recruitment

The project was completed between August to November of 2018. In August, a baseline chart audit was conducted to assess the quality and quantity of how often IP HCPs were providing nutrition education to obese adults. A total of 300 patient charts from March through August of 2018, with documented age, height, weight and BMI, were selected in accordance with IP's estimated patient population. From this subset, 100 patient charts were randomly selected by choosing every third name on the list of 300. A group of 100 randomly selected patient charts was used for the baseline sample charts. On a biweekly basis the project a convenience sample of all patients who met the participant criteria was selected. At the end of the project, all of the conveniently selected patient charts were compare to the randomly selected baseline charts. This project was deemed to not be human research so the participants did not need to sign a consent form. Patient information was kept anonymous to maintain confidentiality.

Implementation Process

The process of implementing the DNP QI project is outlined in Appendix I. This process began with a pre-project implementation patient chart review. The data collection tool used included a section for the participant's age, BMI, whether an obesity diagnosis code was included, whether a dietary counseling diagnosis code was included, and if there was documented evidence of nutrition education provided. The results of this chart audit were discussed in the staff education lunch meeting on August 30, 2018 at 12:30pm (Appendix R). A Mediterranean style lunch was served, the staff was educated on the QI project, and the baseline chart audit results were discussed.

The purpose of the concurrent post-implementation patient chart audits was to evaluate how often the practice HCP's were documenting the ICD-10 codes E66.9 and Z71.3 as well as providing nutrition education to the target population after being informed of the clinics deficits in these actions. The results of the baseline chart audit of 100 randomly selected patients, revealed that the HCPs were diagnosing obesity ICD-10 code E66.9 33% of the time, documenting the dietary education ICD-10 code Z71.3 1% of the time, and providing nutrition education to obese adults 27% of the time. At this lunch meeting the staff was allotted the opportunity to discuss any concerns and all questions were answered. HCP reminders were posted near provider workstations and posters about the Mediterranean diet were placed inside patient rooms.

On August 31st, 2018, IP HCPs began implementing the project with all obese adults who met the established criteria. On September 6, 2018, concurrent post-project implementation patient chart audits began and continued on a biweekly basis. On September 17th, 2018, the first biweekly staff meeting was held to discuss the findings of the first concurrent chart audits. The

HCPs diagnosed obesity ICD-10 code E66.9 66.7% of the time, documented the dietary education ICD-10 code Z71.3 54.5% of the time, and provided nutrition education 88.9% of the time. The first biweekly patient chart audit results and meeting minutes can be seen in Appendix S. The patient charts that were selected are all patients that fit the target population criteria that visited IP between August 31st to September 16th.

The Plan-do-study-act (PDSA) cycle was incorporated in this meeting and every meeting thereafter. The plan and do portion of this cycle was to increase education amongst obese adults with the use of the toolkit. During the meeting the actions over the previous two weeks were reviewed or studied and another plan was developed to act on for the next two weeks.

In addition to discussing the chart audit results, the efficiency of the nutrition education toolkit, as well as the pros and cons of the DNP QI project process were discussed. HCPs mentioned that the “patients loved the toolkit” (S. Byre, personal communication, September 17, 2018). The patients said they “appreciated the fact that it was colorful, well organized and informative” (S. Byre, personal communication, September 17, 2018). The HCPs also elaborated on the fact that “the toolkit was in an easily accessible location” and that the wall reminders helped them “remember to provide the education” (J. Lehr, personal communication, September 17, 2018).

The HCPs were excited about implementing the project. One HCP even developed an electronic medical record short cut that inserted the Mediterranean diet information into the chart to expedite the documentation process. There were no suggestions for components of the project that needed to be changed.

The next chart audit was conducted on September 24th, 2018, followed by the second biweekly staff meeting on October 1, 2018. The second biweekly staff meeting minutes and patient chart audit results, for September 17th to 30th, can be seen in Appendix T. The HCPs

diagnosed obesity ICD-10 code E66.9 77.8% of the time, documented the dietary education ICD-10 code Z71.3 66.7% of the time, and provided nutrition education 77.8% of the time.

When incorporating the PDSA cycle in this meeting, the HCPs stated that there were many factors that influenced the limited improvement in results. One major factor was that they experienced technological difficulties the week prior to the meeting. They shared that the wireless internet connection was vacillating, and three out of five laptops were properly functioning. All providers had to share two computers to document and place orders from September 25th to 27th. These disturbances slowed provider workflow, productivity and efficiency.

The HCPs suggested that adding the component of a report card for each provider, with their personal results, in the chart audit should be implemented from this point forward. They believed that this would promote accountability and provide a clear picture of their progress. Also, at this point, the nutrition education toolkit was made available as a education hyperlink on the electronic medical record system. This meant that all the HCPs needed to do was click, print and add the toolkit with the patient's home instructions after educating them. The accessibility of the toolkit promotes efficiency when providing obese adults with nutrition education.

The next chart audit was completed, and the third staff meeting was held on October 15th, 2018. The third biweekly meeting minutes and patient chart audit results for October 1st to 14th can be seen in Appendix U. The HCPs diagnosed obesity ICD-10 code E66.9 100% of the time, documented the dietary education ICD-10 code Z71.3 100% of the time, and provided nutrition education 100% of the time. This was a great achievement despite the fact that these results only involved two patients, compared to eleven in the other audits. The HCPs shared that over the previous two weeks, "the patient volume was significantly decreased due to the presence of

inclement weather caused by Hurricane Michael” (S. Byre, personal communication, October 15, 2018). They went on to state that “the electricity was unavailable for two days, so the clinic had to remain closed” (S. Byre, personal communication, October 15, 2018).

Another major point of discussion was that the dietary education ICD-10 code, Z71.3, was discovered to not be a billable code. Originally, this code was thought to provide the added benefit of practice reimbursement. Unfortunately, this was not the case. The upside to this discovery was that the code was still needed in order to justify coding for level four and five patient visits, where the provider spends over thirty minutes with the patient. The plan was to continue to use this code as a way of coding that patient education was provided.

The final chart audit for October 15th to 28th was completed, followed by the fourth biweekly staff meeting on October 29, 2018. The fourth biweekly patient chart audit and meeting minutes can be seen in Appendix V. The HCPs diagnosed obesity ICD-10 code E66.9 54.5% of the time, documented the dietary education ICD-10 code Z71.3 36.4% of the time, and provided nutrition education 63.6% of the time. The decrease in compliance was influenced by the fact that the provider workflow was being reestablished after the inclement weather, in addition to the fact that the clinic was closing its doors in . In this meeting, the practice owner announced that she was closing the clinic and that they are no longer accepting new patients. This was a very difficult moment for everyone. In relation to the project, this decreased patient volume and possibly HCP morale.

Despite this disheartening news, the HCPs still expressed their pleasure in participating in the DNP QI project. They commented on how the project facilitator was “very professional, organized and provided great communication throughout the project process” (S. Byre, personal communication, October 29, 2018). They also mentioned that this project facilitated a “change in

their practice, was well received by patients and would be beneficial to other primary care clinics” (J. Lehr, personal communication, October 29, 2018).

On November 12, 2018, the final project evaluation was provided (Appendix X) to IP HCPs and the final project discussion, evaluation and plan was discussed. There was an overall increase in the frequency of the HCPs addressing obesity with obese adults through nutrition education. On average, the HCPs diagnosed obesity ICD-10 code E66.9 74.75% of the time, documented the dietary education ICD-10 code Z71.3 64.4% of the time, and provided nutrition education 82.6% of the time. The comparison of the baseline chart audit results to the overall post-implementation chart audit results can be seen in Appendix W.

Plan Variation

Throughout the implementation phase there were several occurrences where flexibility was needed to accommodate changes to the original plan. Originally, the plan was to educate the entire staff on the project at the lunch meeting on August 30, 2018, but all of the HCPs could not attend on that particular date. Instead, the two HCPs that were unable to attend the meeting were provided with a one on one educational session.

There were also technological failures that were not a part of the plan. During the project implementation phase, the clinic experienced many days where technology was not functioning at its best. There were times when the wireless internet was not functioning, inclement weather cause power outages, and equipment failure slowed provider productivity. This directly impacted the project because if there were limited working computers or the practice was closed due to a power outage then there are limited to no opportunities to educate obese adults.

Finding out that the dietary counseling ICD-10 code Z71.3 was not billable was not a part of the plan either. The practice manager discovered that they were not getting reimbursed for this code, as they originally anticipated. From a more positive aspect, the providers continued to use the code to help justify patient visits that went longer than expected due to the education being provided.

Another plan variation came when the PA announced she was leaving the practice half way through the project. This directly impacted the HCPs by increasing their workload. The most surprising news presented at the end of the project. In the final biweekly meeting, the practice owner announced that the clinic will be closed by the end of the year. Even though these incidences were unexpected, the project still made a great impact on this clinic and in this community.

Summary

The implementation process has been both challenging and rewarding. The QI project is in an ideal setting since IP serves a vast population of obese adults in Durham, North Carolina. The participants that were recruited were English speaking obese adults between the ages of 18 and 65 with BMIs greater than or equal to 30. The baseline patient chart audit revealed that there was a disparity in the quality and quantity of nutrition education being provided to obese adults. The QI project was implemented over several weeks and incorporated four biweekly staff meetings where the PDSA cycle was utilized. The HCPs were very involved, enthusiastic and provided great feedback. The HCPs relayed that the patients were very receptive to the nutritional educational toolkit as well. Unfortunately, due to unforeseen technological difficulties, inclement weather, equipment failures, staff leaving and the practice closing indefinitely, there was much fluctuation in the provider audit results biweekly. But despite these

challenges, there was a drastic improvement in IP HCPs providing nutrition education. The HCPs went from providing nutrition education to obese adults 27% of the time to 82.6% of the time. The HCPs at IP actively provided more nutrition education to obese adults more efficiently. This was an amazing achievement. These results solidify the practice change that has occurred. The next chapter will discuss the evaluation of the practice change initiative by further elaborating on participant demographics and intended outcomes.

Chapter Six: Evaluation of the Practice Change Initiative

The major theme of implementing this Quality Improvement (QI) project was to conduct a practice change. At the completion of this project, the practice had adopted an efficient process of providing nutrition education to obese adults. In order to understand the change that occurred, it must be evaluated. This chapter will discuss the project patient demographics, intended outcome and the findings.

Participant Demographics

The primary population for the project were the HCPs at IP primary care clinic. The HCPs consisted of one FNP, one PA, two MDs and three MAs. The target population requiring nutrition education included only English-speaking adults between the ages of 18 and 65 years that are categorized as obese with body mass index (BMI)'s greater than or equal to 30. The inclusion criteria for the participants in this project were all obese adults that presented to IP for their annual physical exam or to establish care, who were between the age of 18 and 65 that spoke English. Therefore, 1) all non-English speaking patients; 2) who were not obese; 3) younger than 18 and older than 65 years old; 4) that did not present for their annual physical exam or to establish care were excluded. The primary participant demographics that were collected was participant age and BMI, which is displayed in table 1 and table 2.

Table 1 Participant Demographics: Age (years)

Week 1	Week 2	Week 3	Week 4
22	41	48	25
45	42	52	40
44	40		51
59	30		60
30	54		43
30	39		43
57	52		48
55	47		52
52	54		56
			55
			60

Table 2 Participant Demographics: Body Mass Index (BMI)

Week 1	Week 2	Week 3	Week 4
34	37.5	40	33.1
32	31.7	34.1	33.7
30.1	37.8		30.3
30.2	36.1		30.5
30.5	33.7		33.7
31.4	49.4		34
32.8	36.5		42.1
42.4	39.2		34.7
35.5	32.6		31.6
			39.1
			39

As a way of providing a measurable outlook of the overall project evaluation, a survey was provided (Appendix X) to IP HCPs. They were asked to use a Likert scale to rate the student facilitating the DNP QI project and the overall DNP QI project. They were given the option to select the option of never, rarely, sometimes or always for a total of ten questions. Both HCPs that filled out the survey selected that the student facilitating the project always delivered the project education and material in a clear and structured manner, was knowledgeable and enthusiastic about the topic, was well organized and prepared, and actively provided support throughout the project process. They also selected that the DNP QI project always facilitated a

positive practice change, the toolkit contained practical examples and useful techniques, patients were receptive to the information in the toolkit and the toolkit made providing education more efficient. They overall selected always for whether they would recommend this DNP QI project be implemented in other primary care settings.

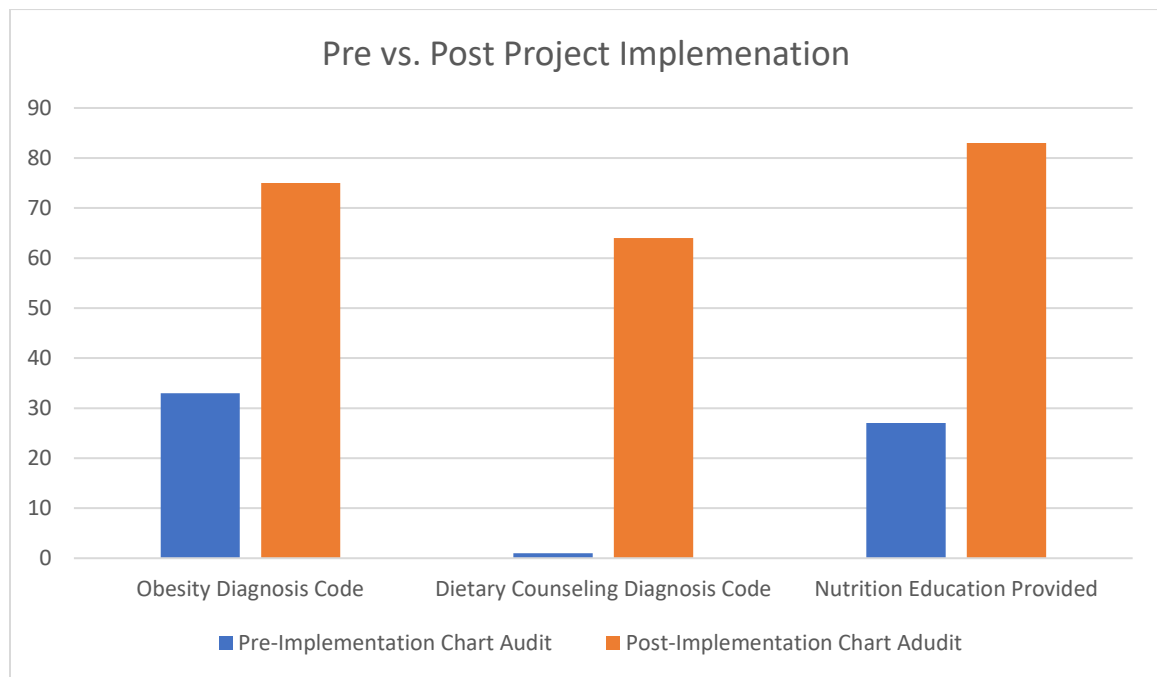
Intended Outcome

The DNP QI project was developed to address the problem that there were a large population of obese adult patients at IP that were not received any nutrition education. IP had a system issue that needed to be addressed so that patients can receive the quality care they deserve. The DNP QI project's intended outcome was to implement an efficient process for the HCPs at IP to provide nutrition education to obese adults.

Findings

This outcome was measured by how many patients charts the HCP documents all three of the following: the appropriate obesity ICD-10 code, dietary counseling ICD-10 code and documentation of nutrition education provided. The results of the pre-implementation chart audit revealed that the HCPs were diagnosing obesity ICD-10 code E66.9 33% of the time, documenting the dietary education ICD-10 code Z71.3 1% of the time, and providing nutrition education to obese adults 27% of the time. After the project was implemented there was an overall increase in the frequency of the HCPs diagnosing obesity, documenting dietary counseling and overall providing nutrition education to obese adults. On average, the HCPs diagnosed obesity 74.75% of the time, documented the dietary education 64.4% of the time, and provided nutrition education 82.6% of the time. This is display in figure 1.

Figure 1



Summary

The DNP QI project was thoroughly evaluated in this section to provide a greater understanding of the significance of the successful practice change that occurred. The participants demographics gave insight into the individual who where the primary population as well as the targeted population. I the HCPs also provided insight into the project evaluation process by completed an evaluation survey. There were able to highlight the project was successful and how they would recommend it in other primary care clinical setting.

Chapter Seven: Implications for Nursing Practice

The American Association of Colleges of Nursing (AACN) published the Essentials of Doctoral Education for Advanced Nursing Practice, which detailed the curricular elements and competencies required by all Doctor of Nursing Practice (DNP) programs (Springer Publishing Company, 2016). The DNP Essentials outline eight foundational competencies, that are required of all DNP graduates, that reconceptualized nursing education to address the increasingly complex needs of a modern healthcare system (Springer Publishing Company [SPC], 2016). This DNP Quality Improvement (QI) project was constructed and implemented with the intent of fulfilling the DNP essentials. This chapter will outline all eight DNP essentials in relation to the completed DNP QI project.

Practice Implications

As stated in previous chapters, this DNP QI was developed to fulfill a need by facilitating a practice change. The healthcare provider (HCP)'s at IP served a large population of obesity adults but lacked an efficient system of providing them nutrition education. This DNP QI project facilitated the practice change need to efficiently provided more nutrition education to obesity adults. This project created a process for HCP led nutrition education, with the use of a toolkit, for adults age 18 and older with BMI's greater than 30 over a twelve-week period. The nutrition education was provided via a toolkit that encouraged patients to obtain healthier weights and make healthier food choices in order to manage or prevent chronic illness.

Essential I: Scientific underpinnings for practice

This DNP essential emphasis the importance of using science-based concepts and theories to evaluate and enhance health care delivery and improve patient outcomes (SPC, 2016). This project was developed to address the epidemic of obesity. As previously highlighted, the

prevalence of obesity is on the rise, which makes it a priority of healthcare systems since obesity influences the development and exacerbation of multiple medical conditions. It has been proven that nutrition education, especially with a focus of on the Mediterranean style diet (MSD), has helped to combat obesity. These findings created the foundation of the DNP QI project.

Evidence-based change theories, such as Lewin's Force Field Model, were utilized in the development and implementation of this project. This theory involved three steps, unfreezing, moving or change, and refreezing (Butts & Rich, 2017). Applying this theory helped to facilitate the organizational change that needed to occur in order to fill the gap in care. This project was deemed successful because it achieved the refreezing state, which means that the organizational change that occurred is complete integrated to the practice. Even though this occurred, there is always recommendations for future study. A recommendation would include to continue to implement this project framework in other primary care clinics and research its actual impact on preventing or managing medical conditions such as pre-diabetes and type 2 diabetes.

Essential II: Organization and systems leadership for quality improvement and systems thinking

This essential accentuates the DNP graduate's role in assimilating nursing science and practice with key skills such as the development of clinical practice guidelines, creating evidence-based interventions, and evaluating practice outcomes (SPC, 2016). The initiation of the DNP QI project was promoted by the discovery of gaps in care and the process for which nutrition education was being provided. This DNP QI project provided an evidence-based intervention to promote practice change. The increase in nutrition education being provided to obese adults was the highlight of the practice outcomes. Recommendations for cost-effective nutrition education initiatives, to improve patient outcomes, may include hardwiring educational handouts into the electronic medical record (EMR). Making nutrition education materials

accessible from the EMR will promote efficiency in distribution of materials and will also make the practice of providing nutrition education more sustainable at the micro, meso, and macro levels.

Essential III: Clinical scholarship and analytical methods for EBP

This DNP essential focuses on a DNP graduate's role in assuring accountability of quality care and patient safety as well as analyzing ethical dilemmas intrinsic to patient care, health care organizations, and scientific research (SPC, 2016). Advanced education in systems leadership equips DNP graduates with skills to facilitate meaningful organization-wide changes in health care delivery, and with government officials to shape initiatives in the health care agenda (SPC, 2016). A major component of the DNP QI project was to translate research into practice. Research recommended nutrition education as a solution to decrease the prevalence of obesity and the project facilitated an intervention to comply with this recommendation. Leadership skills, that the DNP curricula promotes, were necessary to promote, implement and disseminate the findings of this DNP QI project. The student facilitator lead QI meetings biweekly in order to enable change. This project's evidence-based practice findings were disseminated to two other local primary care clinics in efforts to improve healthcare outcome for their patients. The information was very well received at these facilities because they shared similar patient demographic. Recommendations for dissemination of findings would include creating partnerships with facilities that share similar demographics to aid in easing the communication process.

Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare

This essential prepares DNP graduates to utilize information and patient care technologies to support practice leadership and clinical decision making (SPC, 2016). The DNP

QI project utilized information technology in order to the practice change. The nutrition educational toolkit utilized in providing nutrition education was incorporated into the EMR. This allowed the HCPs to update, print and distribute the educational materials with ease. This also lead to a sustainable practice change. One recommendation would be to incorporate an emailing feather into the EMR. If the EMR at IP was able to email the nutrition educational materials to technology savvy patients, it would have been more easily accessible for patients and more cost effective for the healthcare organization.

Essential V: Healthcare policy for advocacy in healthcare

This essential focuses on arming DNP graduates with the ability to critically exam health policy with the goal of advocating for social justice and the entire nursing profession (SPC, 2016). Health policy guides the plans, decisions and actions that are needed to take place in order to meet healthcare goals. Health policy commands healthcare guidelines and makes recommendations to achieve an optimal state of health. This DNP QI project translated evidence-based research and health policy into actions that improved clinical practice. On a global scale, the World Health Organization (WHO) has developed dietary recommendations for healthier populations that promotes the elimination of trans-fat use, more unsaturated fat usage, reduced salt and added sugar intake, and an increase in intake of fruits, vegetables, legumes, whole grains and nuts (Malik, Willett & Hu, 2013).

From a national perspective, the Healthy People 2020 campaign leaders outline evidence-based research supporting the health benefits of eating a healthy diet and maintaining a healthy body weight (Office of Disease Prevention and Health Promotion [ODPHP], 2018). The primary goals of this objective are to change a person's diet and weight by addressing individual behaviors, policies and environments (ODPHP, 2018). The Institute for Healthcare

Improvement Triple Aim works to (1) improve population health, (2) enhance patient experience and (3) reduced or stabilize per capita costs (Verma & Bhatia, 2016). The DNP QI project addresses the patient's experience through the promotion of a healthier lifestyle which leads to a better quality of life.

Advance practice nurses have the potential to enact change in any sector of healthcare policy because of their contributions to the healthcare profession. It is important that they get involved in policy decision making because the changes that are made by legislatures, ultimately affect them. Becoming more involved may include being present at local townhall meetings, looking up who your legislature is and voicing your concerns via phone calls or in person meetings.

Essential VI: Interprofessional collaboration for improving patient and population health outcomes

This essential makes DNP graduates ready to take a leadership role in inter-professional teams (SPC, 2016). With the use of effective communication, they can develop and implement practice models, influence standards of care, and spearhead scholarly projects. (SPC, 2016). The HCPs involved in the DNP QI project were two medical doctors (MDs), one family nurse practitioner (FNP) and one physician assistant (PA). They worked collectively with the student facilitator to create ideas that will help to enable the practice change. What made them so successful in collaborating was they underline mutual respect for one another both personally and professionally. The best recommendation that can be made for interprofessional collaboration is for each individual involved must present with an expectation to give and receive mutual respect in order to achieve the overall goal of better patient outcomes.

Essential VII: Clinical prevention and population health for improving the nation's health

This essential equips DNP graduates with the skills needed to analyze the psychosocial dimensions and cultural impact on healthcare for populations (SPC, 2016). Determinants of health such as socioeconomic status, were uncovered during the implementation of this project. The HCPs found that they needed to investigate and find examples of local grocery stores that provided healthy food at a reasonable price. They found that some patients understood the nutrition education provided but found it difficult to budget in healthier food options when unhealthy options were so much cheaper. The HCPs collaborated by looking through Sunday newspapers, each week, so that they would be able to share with patients which local grocery stores were providing the best deal for the week. By equipping patients with this knowledge, they were able to increase the likelihood of patients in lower socioeconomic statuses to purchase healthier options. This strategy may have indirectly prevented the purchase of unhealthy food choices and weight gain.

Essential VIII: Advanced nursing practice

This essential prepares DNP graduates to coordinate wide-ranging need assessments, mentor other nurses, and guide patients through multifaceted situational changes (SPC, 2016). The DNP graduate, with a focus in advanced practice, should always focus their efforts toward prevention whenever possible. The primary prevention strategies that can be enacted, after a thorough needs assessment, are limitless. Every healthcare setting, especially those that hire new DNP graduates, should have protocols in place for providers to educate patients on strategies they can implement to prevent illness or exacerbation of their illness. Nurse educators who prepare nurses for advanced practice must emphasize the importance of primary prevention as well.

Summary

This chapter highlighted the foundational relevance of the eight DNP essentials with the DNP QI project. The DNP essentials provide insight on the expectations that are set for DNP graduates. The curricula developed for the DNP program, pushes nurses to the fullest extent of their potential. The DNP prepared nurse possess strengths in leadership, community involvement, advocating for health policy, political involvement, interdisciplinary collaboration, and translating research into practice. This DNP QI project was implemented with the intent of addressing each essential in order to make a positive contribution to the health of populations.

Chapter Eight: Final Conclusions

The DNP QI project aimed to combat the worldview that is influenced by this phrase “bigger is better.” The project facilitator investigated and uncovered a gap in the care of obese adults at a local primary care clinic. The problem was identified, and a solution was successfully implemented. This chapter will discuss the positive impact, potential limitations, benefits and the methods of dissemination of the project.

Significance of Findings

The clinical significance of implementing the DNP QI project was that there was an organizational change that occurred for the betterment of patient outcomes. When the HCPs at IP identified their problem of inconsistently and inefficiently providing nutrition education to obese adults, they began working diligently to find a solution. Implementing this project made them conduct frequent self-assessments of how well they were managing their patients. This both improved their practice as providers and the outcomes of their patients.

Project Strength and Limitations

This DNP QI project exude both strengths and limitations. This project conveys a great example of translating evidence-based research into clinical practice. This project provided a solution to combat obesity, a current healthcare epidemic. As well as the fact this project served a community of patients that not only did they enjoy hearing about the information provided, but they reported that they would “make lifestyle changes to lead healthier lives” (S. Byre, personal communication, October 29, 2018). The major limitations in this project was that it was performed in a small clinic, with four HCPs and the clinic closed at the end of the year so there is no way to identify if the organizational change would have been sustained in the future.

Project Benefits

The main benefit of this project was that it indirectly helped a local community clinic by equipping its local HCPs with a solution to resist obesity. The HCPs have obtained new strategies and tools to educate their patients with. In addition, the patients of IP have been equipped with the knowledge they need to help them make healthier choices.

The development of the nutrition education toolkit can be used by other healthcare practices to assist them in developing an efficient process of educating their patients. This project can be easily replicated in other practices to elicit similar improvement efforts. This will facilitate an increase in HCPs promoting obesity awareness and lifestyle modification benefits to obese adult patients on a larger scale.

Recommendations for Practice

This project was disseminated in several settings. Events for which the project has been presented include, East Carolina University College of Nursing poster presentation, IP P.C. Clinic, Richard D. Adelman, MD Family Medicine Clinic and Durham Family Medicine Primary Care Clinic. In addition, this an abstract was submitted to the Chi Eta Phi International Nursing Sorority, Inc. Southeast Regional Conference Scholarly Presentation but was not selected. A recommendation for practice would include additional projects that can be developed such as a nutritional educational plan tailored for obese adults with type 2 diabetes.

Final Summary

This DNP QI project was both challenging and rewarding. It acted as catalyst for change and succeeded in facilitating that change. This project highlighted the importance of providing nutrition education on the Mediterranean diet to obese adults and how to accomplish it efficiently. The HCPs involved went from providing nutrition education to obese adults 27% of

the time to 82.6% of the time, post-project implementation. This project facilitated a practice change. The patients involved in this project were exposed to information that may change their mindset about eating healthier which may affect their lifestyle. The HCPs involved in this project stand to encourage many people to obtain a healthier weight. If the successful establishment of an efficient process to distribute nutritional education to obese adults makes a difference in one individual's life, then this project has served its purpose.

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Appendix A

Literature Review Matrix

Student: Erica Shelly	Course: NURS 8272	Faculty Lead: Carol King	Date: 7/18/18	Project: A Health Provider Nutrition Education Initiative for Obese Adults
Article (APA Citation)	Level of Evidence (I to VII)	Data/Evidence Findings	Conclusion	Use of Evidence in EBP Project Plan (Include your evaluation, strengths/limitations, and relevance)
Esposito, K., & Giugliano D. (2014). Mediterranean diet and type 2 diabetes. <i>Diabetes/Metabolism Research and Reviews</i> , (30)1, 34-40. doi:10.1002/dmrr.2516	Level IV	Adopting a Mediterranean Diet may help prevent type 2 diabetes. A lower carbohydrate, Mediterranean-style diet seems good for HbA1c reduction in persons with established diabetes.	Adopting a Mediterranean Diet may help prevent type 2 diabetes.	This article supports the nutrition education toolkit used in the DNP QI project. Limitation: Small sample size
Velázquez-López, L., Santiago-Díaz, G., Nava-Hernández, J., Muñoz-Torres, A. V., Medina-Bravo, P., & Torres-Tamayo, M. (2014). Mediterranean-style diet reduces metabolic syndrome components in obese children and adolescents with obesity. <i>BMC Pediatrics</i> , 14, 175. doi:10.1186/1471-2431-14-175	Level III	The Mediterranean Diet improves the BMI, glucose and lipid profile in adolescents and children with obesity and metabolic syndrome disorders.	The Mediterranean Diet promotes weight loss.	This article supports the overall desired outcome and supports the nutrition education toolkit.
Sánchez-Villegas, A., Martínez-González, M. A., Estruch, R., Salas-Salvadó, J., Corella, D., Covas, M. I., Arós, F., Romaguera, D., Gómez-Gracia, E., Lapetra, J., Pintó, X., Martínez JA, Lamuela-Raventós RM, Ros E, Gea A, Wärnberg J, Serra-Majem, L. (2013). Mediterranean dietary pattern and depression: The PREDIMED randomized trial. <i>BMC Medicine</i> , 11, p. 208. doi:10.1186/1741-7015-11-208	Level I	The aim of this study was to compare in a randomized trial the effects of two Mediterranean diets versus a low-fat diet on depression risk after at least 3 years of intervention.	There was an inverse association with depression for participants assigned to a Mediterranean diet supplemented with nuts compared with participants assigned to the control group, although this was not significant.	The result suggest that a Mediterranean diet supplemented with nuts could exert a beneficial effect on the risk of depression in patients with DM2. Limitation: One of the main problems of a nutritional intervention trial is the variability in the compliance of participants with the intended dietary intervention.
Martínez-González, M. A. (2016). Benefits of the mediterranean diet beyond the mediterranean sea and beyond food patterns. <i>BMC Medicine</i> , (14)1, 157. doi:10.1186/s12916-016-0714-3	Level IV	Abundant and growing evidence has accrued to demonstrate that the traditional Mediterranean diet is likely to be the ideal dietary pattern for the prevention of cardiovascular disease.	The results of this cohort study showed a significant beneficial effect of the Mediterranean diet on cardiovascular events. These findings support the transferability of this dietary pattern beyond the shores of the Mediterranean Sea.	The authors provided measures of population impact in cardiovascular prevention and estimated that 19,375 cases of cardiovascular death would be prevented each year in the United Kingdom by promoting the Mediterranean Diet. Supports health benefits of the Mediterranean diet. Limitation: Study performed in the United Kingdom
Matarese, L. E., & Pories, W. J. (2014). Adult weight loss diets: Metabolic effects and outcomes. <i>Nutrition in Clinical Practice: Official Publication of the American Society for Parenteral and Enteral Nutrition</i> , 29(6), 759-767. 10.1177/0884533614550251	Level V	Being overweight and obese is associated with numerous comorbidities and is a risk factor for several of the leading causes of death, including cardiovascular disease, diabetes mellitus, and many types of cancer. The foundation of treatment has been diet and exercise.	Ultimately, the best diet is the one the patient will follow and incorporate into his or her daily life for lifelong maintenance of a healthy body weight.	Strength: Provides Comparison of Weight Loss Diets; Highlights that the Mediterranean diet is Nutritionally balanced and not restrictive The Mediterranean diet has been shown to reduce body weight and is rich in foods that are high in antioxidants.
Ohlhorst, S.D., Russell, R., Bier, D., Klurfeld, D.M., Li, Z., Mein, J.R., Milner, J., Ross, A.C., Stover, P., & Konopka, E. (2013). Nutrition research to affect food and a healthy life span. <i>The Journal of Nutrition</i> , (143)8, p.1349-54. doi: 10.3945/jn.113.180638.	Level V	Nutrition research holds the key to increasing our understanding of the causes of obesity and its related comorbidities and thus holds promise to markedly influence global health and economies.	The multidisciplinary nature of nutrition research requires stakeholders with differing areas of expertise to collaborate on multifaceted approaches to establish the evidence-based nutrition guidance and policies that will lead to better health for the global population.	It has also been said that adequate nutrition offers one of the most effective and least costly ways to decrease the burden of many diseases and their associated risk factors, such as obesity.

Paterick, T. E., Patel, N., Tajik, A. J., & Chandrasekaran, K. (2017). Improving health outcomes through patient education and partnerships with patients. <i>Proceedings (Baylor University, Medical Center)</i> , (30)1, p.112–113.	Level VI	Patient health literacy is vital to proven health prevention measures of exercise and diet since having a deep understanding of healthy interventions directly impacts their present and long-term health.	The author emphasized that HCPs need to spend time and energy educating patients in order to see behavioral change that results in improved health outcomes and reduced morbidity and mortality due to preventable chronic diseases such as diabetes, obesity, and coronary and cerebrovascular disease.	Reinforced the need for HCP led nutrition education. Discussed the importance of improving health outcomes through patient education emphasized that it is the responsibility of HCPs to proactively enable patients to have more available interactions and situations that promote health and well-being.
Wagner, M.G., Rhee, Y., Honrath, K., Blodgett Salafia, E.H. & Terbizan, D. (2016). Nutrition education effective in increasing fruit and vegetable consumption among overweight and obese adults. <i>Appetite</i> , 100, p. 94-101. doi: 10.1016/j.appet.2016.02.002.	Level II	The objectives of this study were to evaluate fruit and vegetable consumption patterns, including intake of antioxidant-rich fruits and vegetables, provide education about benefits of consuming fruits and vegetables, expose participants to different varieties of fruits and vegetables, and improve fruit and vegetable consumption.	Fruit and vegetable consumption was below U.S. Dietary Guideline recommendations. Consumption of antioxidant-rich fruits and vegetables increased after intervention. Consumption of fruits as a snack increased after intervention. Nutrition education helpful in improving fruit and vegetable consumption.	This article highlighted how nutrition education was helpful in improving the consumption frequency of antioxidant-rich fruits and vegetables among overweight and obese adults. Weakness: the majority of participants failed to consume the recommended number of servings of fruits and vegetables per day
Perreault, L. (2017, December 13) Obesity in adults: Dietary therapy. <i>Up to date</i> . Retrieved from https://www.uptodate.com/contents/obesity-in-adults-dietary-therapy?search=mediterranean%20diet&source=search_result&selectedTitle=4~34&usage_type=default&display_rank=4	Level I	The term MSD refers to a dietary pattern that is common in olive-growing areas of the Mediterranean.	The most common components of the MSD include a high level of monounsaturated fat, moderate consumption of alcohol (red wine), a high consumption of vegetables, fruits, legumes, and grains. In addition, a moderate consumption of milk, dairy products and a relatively low intake of red meat and meat products.	The use of food diaries, activity records, and self-weighing are ways of self-monitoring, which is one of the elements of a successful behavioral weight loss program.
Sid Ahmed, E., Cornellier, M. L., Ren, J., Askew, L. M., Li, Y., Talaat, N., Rapai, M.S., Ruffin, M.T., Turgeon, D.K., Brenner, D., Sen, A. & Djuric, Z. (2014). Development of exchange lists for mediterranean and healthy eating diets: Implementation in an intervention trial. <i>Journal of Human Nutrition and Dietetics: The Official Journal of the British Dietetic Association</i> , (27)5, p. 413-425. doi: 10.1111/jhn.12158	Level II	A randomized clinical trial was implemented in the USA involving telephone counselling. The Mediterranean diet had 10 dietary goals targeting increases in mono-unsaturated fats, n-3 fats, whole grains and the amount and variety of fruits and vegetables. The Healthy Eating diet had five dietary goals that were based on the US Healthy People 2010 recommendations.	Dietary compliance was 82-88% of goals being met at 6 months. Fruit and vegetable intakes of approximately eight servings per after 6 months. A significant ($P < 0.05$) weight loss was seen.	Counselling for the Mediterranean diet may be useful for both improving diet quality and for achieving a modest weight loss in overweight or obese individuals. The strengths of the present study include the randomized design and the weaknesses include a reliance on self-report for dietary assessments.
Castaldo, G., Monaco, L., Castaldo, L., Galdo, G., & Cereda, E. (2016). An observational study of sequential protein-sparing, very low-calorie ketogenic diet (oloproteic diet) and hypocaloric mediterranean-like diet for the treatment of obesity. <i>International Journal of Food Sciences and Nutrition</i> , (67)6, p. 696-706. doi:10.1080/09637486.2016.1186157	Level IV	The impact of a rehabilitative multi-step dietary program consisting in different diets has been scantily investigated. In an open-label study, 73 obese patients underwent a two-phase weight loss (WL) program: a 3-week protein-sparing, very low-calorie, ketogenic diet (<500 kcal/day; Oloproteic(®) Diet) and a 6-week hypocaloric (25-30 kcal/kg of ideal body weight/day), low glycemic index, Mediterranean-like diet (hypo-MD).	However, the hypo-MD was responsible for a re-increase in blood lipids and glucose tolerance parameters.	A dietary program consisting in a ketogenic regimen followed by a balanced MD appeared to be feasible and efficacious in reducing cardiovascular risk, particularly in patients with metabolic syndrome. Limitation: small sample size and no control group

Mancini, J. G., Filion, K. B., Atallah, R., & Eisenberg, M. J. (2016). Systematic review of the mediterranean diet for long-term weight loss. <i>The American Journal of Medicine</i> , (129)4, p. 415. doi. 10.1016/j.amjmed.2015.11.028	Level I	Researchers conducted a systematic review of randomized controlled trials (RCTs) to determine the effect of the Mediterranean diet on weight loss and cardiovascular risk factor levels after ≥12 months.	The Mediterranean diet resulted in greater weight loss than the low-fat diet at ≥12 months (range of mean values: -4.1 to -10.1 kg vs 2.9 to -5.0 kg), but produced similar weight loss as other comparator diets (range of mean values: -4.1 to -10.1 kg vs -4.7 to -7.7 kg).	Findings suggest that the Mediterranean diet results in similar weight loss and cardiovascular risk factor level reduction as comparator diets in overweight or obese individuals trying to lose weight. Limitations: Only 5 RCTs were included, and these trials included a total of <1000 patients
Noites, A., Pinto, J., Freitas, C. P., Melo, C., Albuquerque, A., Teixeira, M., & Mesquita Bastos, J. (2015). Effects of the mediterranean diet and exercise in subjects with coronary artery disease. <i>Portuguese Journal of Cardiology: An Official Journal of the Portuguese Society of Cardiology</i> , (34)11, p. 655-664. doi. 10.1016/j.repc.2015.05.004	Level II	This study investigated the effects of education sessions on the Mediterranean diet and an exercise program in modifying eating behaviors, body composition and abdominal fat.	An experimental study was performed on 20 subjects with known coronary heart disease randomly assigned to experimental and control groups. Cholesterol, carbohydrate, saturated fat intake, total fat and fat mass was significantly decreased.	The Mediterranean diet reduced carbohydrate and saturated fat intake, reflected in reduced fat mass. The association of the exercise program showed additional benefits in reduction of protein and cholesterol intake and abdominal fat. The small sample size is a limitation of the present study.
Tremmel, M., Gerdtham, U., Nilsson, P. M., & Saha, S. (2017). Economic burden of obesity: A systematic literature review. <i>International Journal of Environmental Research and Public Health</i> , (14)4. doi.10.3390/ijerph14040435 Retrieved from https://www.ncbi.nlm.nih.gov/jproxy.lib.ecu.edu/pmc/articles/PMC5409636/	Level V	This systematic review aimed to assess the economic burden of obesity and to identify, measure and describe the different obesity-related diseases included in the selected studies.	The included twenty-three studies reported a substantial economic burden of obesity in both developed and developing countries. Specifically, there was great variety in the included obesity-related diseases and complications among the studies.	There is an urgent need for public health measures to prevent obesity in order to save societal resources. Limitations: A limitation of this review is that we only used Medline, Web of Science and Google Scholar to search for studies, which may have limited the number of potentially eligible studies.
Nissensohn, M., Román-Viñas, B., Sánchez-Villegas, A., Piscopo, S., & Serra-Majem, L. (2016). The effect of the mediterranean diet on hypertension: A Systematic review and meta-analysis. <i>Journal of Nutrition Education and Behavior</i> , (48)1, p. 53. doi.1. 10.1016/j.jneb.2015.08.023	Level I	The purpose of this study was to analyze the effect of interventions of at least 1- year duration on blood pressure (BP) values through a systematic review and meta-analysis. The focus was on interventions comparing an MD with a low-fat diet.	Meta-analysis showed that interventions aiming at adopting an MD pattern for at least 1 year reduced both the systolic BP and diastolic BP levels in individuals with normal BP or mild hypertension. The effect was higher for the systolic BP but also consistent for the diastolic BP.	A positive and significant association was found between the MD and BP in adults. However, in all cases the magnitude of the effect was small.
Ruiz-Tovar, J., Boix, E., Bozhychko, M., Miren Del Campo, J., Martínez, R., Bonete, J. M., & Calpena, R. (2014). [Pre and postoperative adherence to mediterranean-like diet and its effect on weight loss and cardiovascular risk factors after sleeve gastrectomy]. <i>Nutrición Hospitalaria</i> , (30)4, p. 756-762. doi.10.3305/nh.2014.30.4.7650	Level IV	The aim of this study was to evaluate the adherence to Mediterranean diet of morbidly obese patients before and after undergoing a sleeve gastrectomy.	A total of 50 patients were included in the study. Before surgery, 30% of patients presented a poor adherence to Mediterranean diet, 64% an average adherence and 6% a good adherence, whereas 1 year after surgery 2% showed poor adherence, 58% an average adherence and 40% good adherence (p=0.02).	Patients with better adherence to a Mediterranean diet showed greater weight loss and improvement of lipid profile 1 year after surgery. Limitation: primary population was surgical patients
Specchia, M. L., Veneziano, M. A., Cadeddu, C., Ferriero, A. M., Mancuso, A., Iannale, C., Parente, P., Capri, S. & Ricciardi, W. (2015). Economic impact of adult obesity on health systems: A systematic review. <i>European Journal of Public Health</i> , (25)2, p. 255-262. doi. 10.1093/eurpub/cku170	Level I	The aims of our study were to carry out a systematic review to assess the economic burden of adult obesity in terms of direct and indirect costs and to perform a quality appraisal of the analyzed studies.	Approximately 2044 articles were initially retrieved, and 17 were included in the current review. The included studies showed a medium-high-quality level. Many studies have been conducted from the payer perspective, just direct medical costs can be considered exhaustive.	The review confirmed that obesity absorbs a huge amount of health-care resources. Further research is therefore needed to better understand the economic impact and to identify and promote public health strategies to tackle obesity. Limitation: The studies included do not assess the long-term effects related to obesity, which should be analyzed to have a more detailed picture of the obesity epidemic.

Sofi, F., Macchi, C., Abbate, R., Gensini, G. F., & Casini, A. (2014). Mediterranean diet and health status: An updated meta-analysis and a proposal for a literature-based adherence score. <i>Public Health Nutrition</i> , (17)12, p. 2769-2782. doi.10.1017/S1368980013003169	Level I	The purpose is to investigate the association between the Mediterranean diet and health status and to utilize data coming from all of the cohort studies for proposing a literature-based adherence score to the Mediterranean diet.	A 2-point increase in adherence score to the Mediterranean diet was reported to determine an 8 % reduction of overall mortality, a 10 % reduced risk of Cardiovascular disease, and a 4 % reduction of neoplastic disease.	The Mediterranean diet was found to be a healthy dietary pattern in terms of morbidity and mortality. Limitation: the lack of uniformity in data regarding the same food group. Some studies report potatoes together with vegetables, while others include them as a single food group. Strength: food group data come from the most updated and comprehensive review of the literature in this context.
Patino-Alonso, M. C., Recio-Rodríguez, J. I., Belio, J. F. M., Colomina-Garrido, R., Lema-Bartolomé, J., Arranz, A. G., Agudo-Conde, C., Gomez-Marcos, M.A. & Garcia-Ortiz, L. (2014). Factors associated with adherence to the mediterranean diet in the adult population. <i>Journal of the Academy of Nutrition and Dietetics</i> , (114)4, p. 583-589. doi.10.1016/j.jand.2013.07.038	Level IV	The study aim was to analyze the variables associated with adherence to the Mediterranean diet in the adult population.	The differences between Mediterranean diet compliers and noncompliers are defined by the consumption of fruit, red meats, carbonated beverages, wine, fish/shellfish, legumes, pasta, and rice.	The factors associated with improved Mediterranean diet adherence included female sex, age older than 62 years, moderate alcohol consumption, and physical exercise. Limitation: the heterogeneity of the study participants, who included some individuals with diseases such as diabetes or arterial hypertension.
Bonaccio, M., Di Castelnuovo, A., Costanzo, S., De Lucia, F., Olivieri, M., Donati, M. B., de Gaetano, G., Iacoviello L. & Bonanni A. (2013). Nutrition knowledge is associated with higher adherence to mediterranean diet and lower prevalence of obesity. <i>Appetite</i> , 68, p. 139-146. doi.10.1016/j.appet.2013.04.026	Level IV	The aim of this study was to evaluate the role of nutrition knowledge in determining possible differences among dietary patterns in a general population from a Mediterranean region.	Nutrition knowledge was significantly associated with higher adherence to a Mediterranean dietary pattern. The odds of having higher adherence to a Mediterranean dietary pattern increased with greater nutrition knowledge.	The results showed that nutrition knowledge was significantly associated with higher adherence to a Mediterranean dietary pattern and with lower prevalence of obesity in a Southern Italian region with Mediterranean diet tradition independently from education and other socioeconomic factors.

Appendix B

Literature Search Strategy Log

Student: Erica Shelly	Course: NURS 8272	Faculty Lead: Carol King	Date: 7/18/18	Project: A Health Provider Nutrition Education Initiative for Obese Adults
Database	Key Word Searches	Limits/Filter	# of Citations Found / Kept	Rationale for Inclusion / Exclusion (include rationale for excluding articles as well as for inclusion)
CINAHL (EBSCOhost)	Obesity AND the Mediterranean diet	Less than 5 years old Best match Find all my search terms	15 found 2 kept	2 kept; articles directly related to clinical question
CINAHL (EBSCOhost)	Obesity AND nutrition education	Less than 5 years old Best match Find all my search terms	35 found 1 kept	1 articles kept; directly related to clinical problem
CINAHL (EBSCOhost)	Obesity AND patient education	Less than 5 years old Best match Find all my search terms	105 found 2 kept	1 redundant; 1 outlined potential strategies to address the problem
PubMed (NCBI)	Obesity AND the Mediterranean diet	Less than 5 years old Best match	944 found kept 4	2 relative to clinical problem and 2 provide strategies for potential outcomes
PubMed (NCBI)	Obesity AND nutrition education	Less than 5 years old Best match	750 found kept 3	1 redundant; 2 outlined potential strategies to address the project outcomes
PubMed (NCBI)	Cost of obesity	Less than 5 years old Best match	500 found kept 3	3 Systematic reviews; All highlighted significant of clinical problem
PubMed (NCBI)	Body mass index AND obesity	Less than 5 years old Best match	1090 found 2 kept	1 redundant; 1 articles kept directly related to clinical question
PubMed (NCBI)	Plan-study-do-act (PDSA)	Less than 5 years old Best match	1020 found 1 kept	1 article kept related to project design
PubMed (NCBI)	Adult Obesity AND the Mediterranean diet	Less than 5 years old Best match	488 found 2 kept	2 articles kept related to the benefits of the Mediterranean Diet for obese adults

Appendix C

Education on the Mediterranean Diet

Mediterranean Diet Nutrition Education Toolkit

The Mediterranean style diet (MSD) refers to a dietary pattern that is common in olive-growing areas of the Mediterranean that encompasses countries in southern Europe, the Levant and north Africa (Perreault, 2017). The most common components of the MSD include a high level of healthy fat, and a high consumption of vegetables, fruits, beans, and grains (Perreault, 2017). In addition, a moderate consumption of milk, dairy products, lean meats (e.g., fish and chicken) and a relatively low intake of red meat and processed meat products (e.g., hot dogs and lunch meats) (Perreault, 2017). The MSD has been shown to reduce body weight, be nutritionally balanced and not restrictive, and is rich in foods that are high in antioxidants (Matarese & Pories, 2014). Providing nutrition education alongside MSD information results in a higher adherence to a MSD with lower prevalence of obesity (Bonaccio et al., 2013). For a wealth of healthy eating information visit: oldwayspt.org

UNDERSTANDING THE PYRAMID

The Mediterranean Diet Pyramid depicts the traditional foods and drinks that make up the healthy, balanced Mediterranean Diet. It contains many of the foods you will find in other dietary pyramids. The principal difference is in the frequency that some foods are eaten. Almost all foods can be part of a balanced and healthy diet – but your overall health and well-being can be greatly affected by how often you eat different foods, and the portion size you choose.

**LIVE A LONGER, HEALTHIER LIFE WITH THE MEDITERRANEAN DIET**

The Med Diet can help you:

- ✦ Lengthen Your Life
- ✦ Prevent Asthma
- ✦ Fight Certain Cancers
- ✦ Protect From Diabetes
- ✦ Keep Depression Away
- ✦ Prevent Chronic Diseases
- ✦ Nurture Healthier Babies
- ✦ Ward off Parkinson's Disease
- ✦ Safeguard from Alzheimer's Disease
- ✦ Aid Your Weight Loss and Management Efforts
- ✦ Lower Risk of Heart Disease and High Blood Pressure

(Oldways, n.d.).

MEDITERRANEAN DIET ALL-STARS

Meet just a few of the many nutrition powerhouses that form the foundation of the Mediterranean Diet.

AVOCADOS

High in fiber, and filled with healthy monounsaturated fat and vitamin E, avocados are available all year. Add them to salads, use in dips, or simply eat out of the shell with a spoon.

**FISH**

Eat fish, which contain healthy fats, twice a week. Salmon, sardines, and mackerel are great sources of heart healthy omega-3 fatty acids.

**TOMATOES**

A source of vitamin C and lycopene, a potent antioxidant, tomatoes stimulate immune function and help fight chronic diseases.

**YOGURT**

A protein powerhouse, yogurt contains calcium to protect and strengthen bones and also has beneficial bacteria that are important for digestive health. Look for Greek yogurt, which delivers twice the protein of regular yogurt, plus a rich, tangy taste.

**BEANS**

A great source of protein and fiber, swap beans for meat to make one or two meatless meals per week. If you use canned beans, rinse them well to remove some of the sodium.

**NUTS, PEANUTS, SEEDS**

Packed with protein, fiber and heart-healthy fats, a handful of nuts makes a good snack. Or, add a small amount of sesame or sunflower seeds to salads or toss them with roasted vegetables.

**WINE**

Wine contains powerful antioxidants that come from grape skins and seeds and has been shown to reduce the risk of most diseases of aging. Enjoy up to one glass a day for women and two for men to help prevent strokes. If you're not a wine drinker, have a glass of 100% grape juice.

**WHOLE GRAINS**

Packed with nutrients, fiber and protein, whole grains contain “good” carbs and are an important choice for healthy eating. Learn to cook popular Mediterranean whole grains such as barley, brown rice, bulgur, whole wheat couscous, and farro, for salads and side dishes.



(Oldways, n.d.).

Appendix D

Healthy Eating Suggestions

HEALTHY NEW HABITS

As you adopt the Mediterranean Diet, you'll open your tastebuds to a whole new world of flavors, while improving your health.

AVOCADOS

- ❖ Try mashed avocado instead of butter, jelly or cream cheese on bagels or toast.
- ❖ Enjoy guacamole instead of sour-cream dip.



BEANS

- ❖ Add beans to chilies and casseroles, or use half ground turkey and half beans instead of ground beef.
- ❖ Puree cooked beans and use them as the base of healthy dips.
- ❖ Combine hummus with herbs and use as a sandwich spread instead of butter or mayo.

FRUIT

- ❖ Eat a bowl of fresh berries and yogurt, instead of ice cream, or reach for grapes, oranges, or melon chunks instead of cookies.
- ❖ Reduce the oil in muffins and quick breads by half and substitute unsweetened applesauce or mashed banana to make up the difference.
- ❖ Serve a sandwich with sliced apples or pears on the side, instead of chips.
- ❖ End a meal with sweet, fresh fruit.



HERBS AND SPICES

- ❖ Use fresh or dried herbs and spices to add flavor to grain dishes, soups, dressings and sauces. You'll use less salt.
- ❖ Reduce sugar by about half in baked goods and add cinnamon, cloves, ginger and nutmeg to enhance the taste.

OLIVE OIL

- ❖ Dip bread into olive oil rather than spreading it with butter, or use olive oil instead of butter on cooked veggies.
- ❖ Toss popcorn with olive oil and a sprinkling of Parmesan cheese or herbs instead of butter and salt.
- ❖ Substitute olive oil for butter in baking for lighter-tasting breads and cakes. The chart at right shows how to make the switch.

WHOLE GRAINS

- ❖ Stuff peppers with cooked whole grains instead of meat.
- ❖ Cook brown rice, quinoa, whole wheat couscous, or other whole grains instead of white rice.
- ❖ Try whole wheat flour in place of half the white flour in recipes for cookies, muffins, quick breads, and pancakes.
- ❖ Use whole grain pasta instead of enriched pasta to triple the amount of fiber and reduce the number of calories.



YOGURT

- ❖ Use Greek yogurt instead of mayonnaise in potato and pasta salads, or use 2/3 yogurt to 1/3 mayonnaise.
- ❖ Use Greek yogurt in place of sour cream in baking, or instead of cream in a dressing.
- ❖ Fruit-flavored yogurt can contain up to 5 teaspoons of sugar per serving. Buy plain yogurt instead, and flavor it with a teaspoon of jam or maple syrup, or your favorite fresh fruit.

BAKING SUBSTITUTIONS

BUTTER	OLIVE OIL
1 tsp	5/4 tsp
2 tsp	1 1/2 tsp
1 Tbsp	2 1/4 tsp
2 Tbsp	1 1/2 Tbsp
1/4 cup	3 Tbsp
1/3 cup	1/4 cup
1/2 cup	1/4 cup + 1 Tbsp
2/3 cup	1/2 cup
3/4 cup	1/2 cup + 1 Tbsp
1 cup	3/4 cup



(Oldways, n.d.).

KEEP SNACKS SIMPLE

- ❖ Top pita bread with a slice of tomato and a few tablespoons of grated cheese and broil for a minute to create a healthy mini-pizza.
- ❖ Marinate olives in olive oil, lemon zest, coriander seeds and cumin seeds and enjoy as a tasty snack.
- ❖ Enjoy popcorn air-popped and tossed with a bit of olive oil and Parmesan cheese.
- ❖ Focus on fruit. Eat an apple or an orange, or have a peach with ricotta or cottage cheese, or spread a few apple slices with peanut butter.
- ❖ Fill celery stalks with hummus or different nut butters. Or, keep string cheese on hand and enjoy a piece between meals.

Handout

SHOPPING & TASTING THE MEDITERRANEAN DIET

8 SIMPLE STEPS

for Good Health with the Mediterranean Diet

1. **Eat lots of vegetables.** From a simple plate of sliced fresh tomatoes drizzled with olive oil and crumbled feta cheese to stunning salads, garlicky greens, fragrant soups and stews, healthy pizzas, or oven-roasted medleys, vegetables are vitally important to the fresh tastes and delicious flavors of the Mediterranean diet.



2. **Change the way you think about meat.** If you eat meat, have smaller amounts - small strips of sirloin in a vegetable sauté, or a dish of pasta garnished with diced prosciutto.

3. **Enjoy some dairy products.** Eat Greek or plain yogurt, and try smaller amounts of a variety of cheeses.

4. **Eat seafood twice a week.** Fish such as tuna, herring, salmon, and sardines are rich in omega-3 fatty acids, and shellfish including mussels, oysters, and clams have similar benefits for brain and heart health.



5. **Cook a vegetarian meal one night a week.** Build meals around beans, whole grains, and vegetables, and heighten the flavor with fragrant herbs and spices. Down the road, try two nights per week.

6. **Use good fats.** Include sources of healthy fats in daily meals, especially extra-virgin olive oil, nuts, peanuts, sunflower seeds, olives, and avocados.

7. **Switch to whole grains.** Whole grains are naturally rich in many important nutrients; their fuller, nuttier taste and extra fiber keep you satisfied for hours. Cook traditional Mediterranean grains like bulgur, barley, farro and brown, black or red rice, and favor products made with whole grain flour.

8. **For dessert, eat fresh fruit.** Choose from a wide range of delicious fresh fruits - from fresh figs and oranges to pomegranates, grapes and apples. Instead of daily ice cream or cookies, save sweets for a special treat or celebration.



(Toups, 2016).

BROWN BAG IT TO WORK

Fill a whole-grain pita pouch with Greek salad and put the dressing in a separate container; add the dressing just before eating to keep the sandwich from getting soggy.



Take a thermos of soup or vegetable stew to work. Toss in some leftover whole grains before you screw on the lid, to make your soup even healthier.



Transform leftover brown rice, quinoa, and other whole grains into lunch by mixing them with chopped raw vegetables or beans and adding a little salad dressing.

Keep whole grain bread in the freezer and make a sandwich using frozen bread and hummus, sprouts, leafy greens, sliced peppers, turkey, chicken, or smoked salmon. By lunchtime the thawed bread will taste fresh.

Pack a container of Greek yogurt, which has twice the protein of regular yogurt, and combine it with chopped fruit and a sprinkling of chopped nuts.

(Oldways, n.d.).

Appendix E

Mediterranean diet grocery shopping list

Handout

SHOPPING & TASTING THE MEDITERRANEAN DIET

AISLE BY AISLE IDEAS

The foods listed below are not the only foods you can enjoy in the Mediterranean diet - just some examples that fit in a single page. Let your taste buds guide you, and pick your favorite fruits, vegetables and whole grains, along with fish, beans, nuts, seeds and other healthy foods. As long as you stick with a wide variety of minimally-processed foods, as close to their original form as possible, it's hard to go wrong!

Mediterranean Diet Grocery List

Vegetables

Fresh veggies are important for weight control and good health. Frozen and low-sodium canned veggies are also good choices.

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> Artichokes | <input type="checkbox"/> Onions |
| <input type="checkbox"/> Bell Peppers | <input type="checkbox"/> Peas |
| <input type="checkbox"/> Broccoli | <input type="checkbox"/> Squash |
| <input type="checkbox"/> Carrots | <input type="checkbox"/> Tomatoes (Fresh, Canned, Sauce) |
| <input type="checkbox"/> Eggplant | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Garlic | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Green Beans | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Leafy Greens | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Mushrooms | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Olives | <input type="checkbox"/> _____ |

Fruits

Fresh fruits are important for weight control and good health. Frozen and canned fruit without added sugars are also good choices.

- | | |
|-----------------------------------|---------------------------------------|
| <input type="checkbox"/> Apples | <input type="checkbox"/> Oranges |
| <input type="checkbox"/> Avocados | <input type="checkbox"/> Peaches |
| <input type="checkbox"/> Bananas | <input type="checkbox"/> Plums |
| <input type="checkbox"/> Berries | <input type="checkbox"/> Pomegranates |
| <input type="checkbox"/> Cherries | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Dates | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Figs | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Grapes | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Lemons | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Melon | <input type="checkbox"/> _____ |

Herbs and Spices

Herbs and spices add great flavor without extra fat or salt.

- | | |
|-------------------------------------|-----------------------------------|
| <input type="checkbox"/> Basil | <input type="checkbox"/> Sage |
| <input type="checkbox"/> Bay Leaves | <input type="checkbox"/> Tarragon |
| <input type="checkbox"/> Chiles | <input type="checkbox"/> Thyme |
| <input type="checkbox"/> Cilantro | <input type="checkbox"/> Oregano |
| <input type="checkbox"/> Coriander | <input type="checkbox"/> Pepper |
| <input type="checkbox"/> Cumin | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Mint | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Parsley | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Rosemary | <input type="checkbox"/> _____ |

Mediterranean Diet Grocery List

Beans

Beans are a great way to add fiber and protein to a meal. Eat them in place of red meat at least once a week. If using canned, rinse and drain them before use to remove some of the sodium.

- | | |
|---|---|
| <input type="checkbox"/> Black Beans | <input type="checkbox"/> Lentils |
| <input type="checkbox"/> Chickpeas (Garbanzo) | <input type="checkbox"/> Pinto Beans |
| <input type="checkbox"/> Hummus | <input type="checkbox"/> White Beans (Cannellini) |

Nuts and Seeds

Both are a great source of protein, fiber, and healthy fats. Stick to just a handful a day because they are high in calories.

- | | |
|----------------------------------|--|
| <input type="checkbox"/> Almonds | <input type="checkbox"/> Pine Nuts |
| <input type="checkbox"/> Cashews | <input type="checkbox"/> Sunflower Seeds |
| <input type="checkbox"/> Flax | <input type="checkbox"/> Walnuts |
| <input type="checkbox"/> Peanuts | <input type="checkbox"/> _____ |

Healthy Oils/Fats

Store oils in a cool, dark place to preserve their nutrients.

- | | |
|---|---|
| <input type="checkbox"/> Extra-Virgin Olive Oil | <input type="checkbox"/> Canola Oil |
| <input type="checkbox"/> Avocado Oil | <input type="checkbox"/> Grape Seed Oil |

Grains

Choose mostly whole-grain products, specifically those with the word "whole" as the first ingredient, e.g. "whole wheat."

- | | |
|--|----------------------------------|
| <input type="checkbox"/> Barley | <input type="checkbox"/> Pasta |
| <input type="checkbox"/> Bread (e.g. Loaf, Pita) | <input type="checkbox"/> Polenta |
| <input type="checkbox"/> Bulgur | <input type="checkbox"/> Quinoa |
| <input type="checkbox"/> Couscous | <input type="checkbox"/> Rice |
| <input type="checkbox"/> Oatmeal | <input type="checkbox"/> _____ |

Seafood

Oily fish like salmon contain healthy omega-3s. White fish is a great lean protein.

- | | |
|---------------------------------|-----------------------------------|
| <input type="checkbox"/> Clams | <input type="checkbox"/> Scallops |
| <input type="checkbox"/> Cod | <input type="checkbox"/> Shrimp |
| <input type="checkbox"/> Crab | <input type="checkbox"/> Tilapia |
| <input type="checkbox"/> Salmon | <input type="checkbox"/> Tuna |

Dairy/Eggs

- | | |
|---------------------------------------|--------------------------------|
| <input type="checkbox"/> Cheese | <input type="checkbox"/> Eggs |
| <input type="checkbox"/> Low-Fat Milk | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Plain Yogurt | <input type="checkbox"/> _____ |

(Toups, 2016).

Appendix F

Recipe Samples

**Mediterranean Diet Sample Recipes****Simple Grilled Salmon & Vegetables**

Prep 25 minutes Ready in 25 minutes

Recipe by: Hilary Meyer

Ingredients

- | | |
|--|--|
| 1 medium zucchini, halved lengthwise | ½ teaspoon ground pepper |
| 2 red, orange and/or yellow bell peppers, trimmed, halved and seeded | 1¼ pounds salmon fillet, cut into 4 portions |
| 1 medium red onion, cut into 1-inch wedges | ¼ cup thinly sliced fresh basil |
| 1 tablespoon extra-virgin olive oil | 1 lemon, cut into 4 wedges |
| ½ teaspoon salt, divided | |

Directions

- Preheat grill to medium-high.
- Brush zucchini, peppers and onion with oil and sprinkle with ¼ teaspoon salt. Sprinkle salmon with pepper and the remaining ¼ teaspoon salt.
- Place the vegetables and the salmon pieces, skin-side down, on the grill. Cook the vegetables, turning once or twice, until just tender and grill marks appear, 4 to 6 minutes per side. Cook the salmon, without turning, until it flakes when tested with a fork, 8 to 10 minutes.
- When cool enough to handle, roughly chop the vegetables and toss together in a large bowl. Remove the skin from the salmon fillets (if desired) and serve alongside the vegetables. Garnish each serving with 1 tablespoon basil and serve with a lemon wedge.

**Mediterranean Meatballs**

Prep 10 Minutes/ Ready in 30 Minutes

Recipe by: Diabetic Living Magazine

Ingredients

- | | |
|---|--|
| 1 12-ounce jar roasted red peppers | 1½ cups soft whole-wheat bread crumbs (about 2 slices) |
| ½ cup refrigerated or frozen egg product, (thawed) or 2 eggs lightly beaten | ⅓ cup tomato sauce |
| ½ cup snipped fresh basil, or 1 tablespoon dried basil, crushed | ¼ cup snipped fresh flat-leaf parsley |
| ½ teaspoon salt | ¼ teaspoon ground black pepper |
| 2 pounds 95% lean ground beef | |

Directions

- Preheat oven to 350°F.
- In a large bowl, combine roasted red peppers, bread crumbs, egg product, tomato sauce, basil, parsley, salt, pepper.
- Add ground beef; mix well.
- Shape meat mixture into 48 meatballs.
- Place meatballs in a foil-lined 15x10x1-inch baking pan. Bake about 20 minutes or until done (160°F)

(EatingWell, n.d.).

Appendix G

Instructions on reading nutrition labels

What's On The Nutrition Facts Label

The Nutrition Facts Label found on packaged foods and beverages is your daily tool for making informed food choices that contribute to healthy lifelong eating habits. Explore it today and discover the wealth of information it contains!

Serving Size

Serving Size is based on the **amount of food that is customarily eaten** at one time. All of the nutrition information listed on the Nutrition Facts Label is based on **one serving** of the food.

The serving size is shown as a common household measure that is appropriate to the food (such as cup, tablespoon, piece, slice, or jar), followed by the metric amount in grams (g).

When comparing calories and nutrients in different foods, check the serving size in order to make an accurate comparison.

Servings Per Container

Servings Per Container shows the **total number of servings** in the entire food package or container. It is common for one package of food to contain more than one serving.

The information listed on the Nutrition Facts Label is based on **one serving**. So, if a package contains *two servings* and you eat the entire package, you have consumed *twice the amount of calories and nutrients* listed on the label.

Calories

Calories refers to the **total number of calories**, or "energy," supplied from all sources (fat, carbohydrate, protein, and alcohol) in one serving of the food.

To achieve or maintain a healthy body weight, balance the number of calories you eat and drink with the number of calories you burn during physical activity and through your body's metabolic processes.

As a general rule:
100 calories per serving is **moderate**
400 calories per serving is **high**

(FDA, 2018).

Nutrition Facts	
Serving Size 1 package (272g)	
Servings Per Container 1	
Amount Per Serving	
Calories 300	Calories from Fat 45
% Daily Value*	
Total Fat 5g	8%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Cholesterol 30mg	10%
Sodium 430mg	18%
Total Carbohydrate 55g	18%
Dietary Fiber 6g	24%
Sugars 23g	
Protein 14g	
Vitamin A	80%
Vitamin C	35%
Calcium	6%
Iron	15%
* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Saturated Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g

Appendix H
Food Diary Template

My Food Diary

Day _____

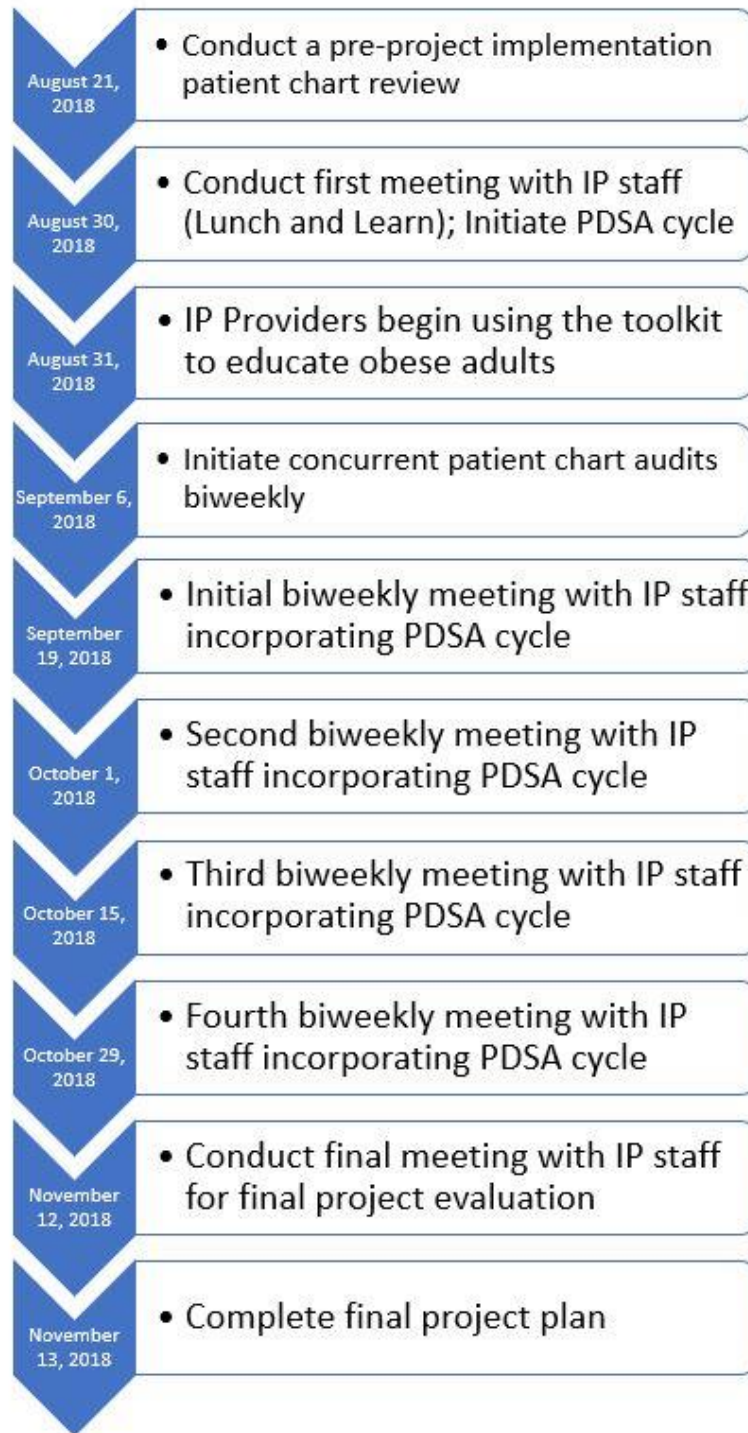


Breakfast			
Snack			
Lunch			
Snack			
Dinner			

(CDC, n.d.).

Appendix I

Process of Implementation



Appendix J

DNP QI Project Budget

Erica Shelly DNP QI Project Budget

ADMINISTRATIVE		
Supplies	\$	50.00
Printing	\$	40.00
Project Promotional items	\$	30.00
Gifts for involved healthcare providers	\$	100.00
	\$	-
	\$	220.00
FOOD		
Initial Lunch and Learn Meal	\$	50.00
Post project Meal for Staff	\$	50.00
	\$	100.00
TRAVEL		
Gas	\$	165.00
	\$	165.00
TOTAL	\$	485.00

Appendix K

DNP QI Project Data Collection Tool

	Patient ID	BMI	Age	Obesity ICD-10 code entered	Dietary counseling ICD-10 entered	Nutrition education provided
1	Example: 1	41.3	30	Yes	Yes	No
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
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17						
18						
19						
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22						
23						
24						
25						

Appendix L

Approved Project Evaluation Form

ECU CON DNP PROJECT EVALUATION

Student: Erica Shelly Course Faculty: Carol King Date of Review: _____
 Review Type: ☐ Mid Term or ☐ Final Project Title: A Health Provider Nutrition Education Initiative for Obese Adults
 Project Site: Integrative Physicians

DNP Projects should be designed so that processes and/or outcomes will be evaluated to guide practice and policy and address all the DNP Essentials. Clinical significance is as important in guiding practice as statistical significance is in evaluating research. All Criteria must be met for student to progress to NURS 8272 DNP Project II.

Criteria	Met	Not Met	Unclear	Rationale
1. Is the project feasible and realistic within the timeframe of the program of study?				This project will be initiated at a small private practice from August to November of 2018. This project will be completed in the allotted timeframe.
2. Is there evidence to support the need for the project at the specific site?				Integrative Physicians (IP) is the primary care practice that the proposed DNP QI project will be implemented. This practice serves a large population of obese adult patients that do not have documented evidence of nutrition education. This project will help provide nutrition education consistently and efficiently.
3. Does the project include a theoretical framework for implementation?				The Health Promotion Model, developed by Nola J. Pender, will serve as the theoretical framework for the proposed DNP QI project. This model was chosen because it focuses on disease prevention, health promotion and describes how we can motivate patients toward achieving their desired healthy outcomes.
4. Is the project supported by evidence provided through existing scholarly literature?				Many scholarly articles provide strong evidence on the importance of healthcare provider led education in addition to how adherence to a Mediterranean style diet leads to health promotion and disease prevention. The nutrition education in the toolkit is supported by evidence-based research.
5. Does the project focus on a change that impacts healthcare outcomes either through direct or indirect care/clinical practice?				This project focuses on a change that will directly impact patients and clinicians. This project works to provide clinicians with an efficient way of educating their patients, in addition to empowering patients with nutrition education.
6. Will the project solve systems or practice problems or directly inform clinical practice?				The project will solve a practice problem by providing a more efficient way for clinicians to provide adults with BMI's greater than or equal to 30 with a more efficient process of providing nutrition education.
7. Does the project have a system (micro-, meso-, or macro- level) or population/aggregate focus? (Intended project population clearly defined)				The primary population for the proposed DNP QI project will be the medical staff at Integrative Physicians (IP) primary care practice. The target population for this project are adults, over 18 years with BMI's greater than or equal to 30.
8. Does the project demonstrate implementation in the appropriate setting or area of practice? Site letter of support is required prior to final approval)				This project will be implemented at a primary care private practice.
9. Does the project address outcomes associated with the Triple Aim and/or Healthy People 2020?				This project will address Healthy People 2020's goal to reduce the proportion of adults who are obese.
10. Does the project include proposed overall measurable outcomes?				The project outcomes will be measured by how many patients charts the healthcare provider's document all three of the following: the appropriate obesity ICD-10 code (E66.9), dietary counseling ICD-10 code (Z71.3) and documentation of nutrition education provided with resources given.
11. Does the project provide a foundation for future practice scholarship and interprofessional leadership?				This project provides the opportunity for the NP's, PA's and MD's in this practice to provide consistent nutrition education for all obese adult patients. In addition, the primary nutrition education toolkit used in this project has the potential to include other health promotional topics.

DNP I Faculty comments/discussion: ☒ Met 100% OR ☐ Did not meet 100%. Explain:

Action Plan: What does the student need to do to meet the unmet needs? Student action plan should include the specific areas needing additional development with specific dates of completion. Student will continue to refine the project proposal until approved:

Faculty Reviewer Signature: Carol Ann King, DNP Signature: _____ Date: 4/16/18

As the DNP Program Director, I have reviewed this project and ☒ Approve OR ☐ Do not approve this project.

Comments:

Program Director Signature:

Appendix M

Approved ECU IRB Letter



Projects Requiring IRB Review vs. Quality Improvement, Quality Assessment, or Quality Assurance: A Worksheet to Assist in Determining When IRB Review is Required

Use this worksheet to help determine whether a proposed activity or project involving humans or their individually identifiable information is considered research needing IRB review or a quality related activity that would not require IRB approval.

	True	False
The PRIMARY purpose of the proposed activity or project is to learn about or learn from existing care to IMPROVE what is done here at the local institution with regard to patient outcomes, efficiency, cost, patient/staff satisfaction, etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The activity or project would be carried out even if there was <u>no</u> possibility of publication in a journal or presentation at an academic meeting. (**Please note that answering "True" to this statement does not preclude publication of a quality activity.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The activity or project falls under well-accepted care practices/guidelines.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The activity or project involves no more than minimal risk procedures meaning the probability and magnitude of harm or discomfort anticipated are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

If **any** of the above answers is "False", a submission for IRB approval is most likely needed. If all the above answers are "True", then it is very likely that IRB approval is not required. Please contact the Office of Research Integrity and Compliance (ORIC) with any questions at 252-744-2914 or umcirtb@ecu.edu. If you would like the ORIC to verify that an activity or project is not human subject research, please provide this form along with a summary of your activity to the ORIC at umcirtb@ecu.edu and the following page will be completed and returned to you for your records.

Project title: A Health Provider Nutrition Education Initiative for Obese Adults

Summary of activity including information about project aims/objectives, methods for carrying out the project and information about data to be collected (you may instead attach documentation describing your proposal):

Obesity-related conditions are some of the leading causes of preventable death. At Integrative Physicians (IP) primary care practice, there is a large population of adult patients with body mass indexes (BMI) greater than 30, that do not have documented evidence of nutrition education. The purpose of the proposed Doctor of Nursing Practice (DNP) Quality Improvement (QI) project is to determine if a nutrition education toolkit, introduced by the HCP, will be an efficient method to increase the frequency of HCP lead nutrition education amongst adults over age 18 years with BMI's greater than 30. The primary population for the proposed DNP QI project will be the medical staff at IP.

Methods include conducting a pre-project implementation patient chart review to establish a baseline of how many obese adults are receiving nutrition education. Then the first meeting with IP staff will be held to educate the staff on the implementation process. Next, biweekly meetings with the staff and concurrent patient chart reviews will occur on four separate occasions. Information to be collected includes Age, BMI, and the corresponding yes or no response for the obesity ICD-10 code, dietary counseling ICD-10 code and evidence of nutrition education provided. After this is completed, there will be a post-implementation patient chart review to assess overall changes in the prevalence of documented nutrition education for obese adults. This will be measured by how many patients charts the HCP documents all three of the following: the appropriate obesity ICD-10 code, dietary counseling ICD-10 code and documentation of nutrition education provided.

*** The ORIC will contact you if any further information is needed to make this determination. Please note that if the ORIC determines the activity is not human subject research, then any presentation, publication, etc. should not refer to the activity as “human subject research”, “exempt research” or “expedited research”.

ORIC Determination:

☒ Not Human Research: The ORIC has determined that based on the description of the project, approval by the IRB is not necessary. Any changes or modifications to this project may be discussed with the ORIC at that time to ensure those changes do not elevate the project to human research that would need IRB approval.

☐ Human Research: This project requires review by the IRB prior to initiation. An application in the electronic IRB submission system should be submitted.

ORIC Staff Signature:

Appendix N

Integrative Physicians Site Approval Letter

Integrative Physicians
3001 Academy Rd, Suite 200
Durham, NC 27707
919-403-8600
919-489-8585 fax

Date: 4/25/2018

To Whom It May Concern

We at Integrative Physicians have reviewed Erica Shelly's DNP Project title "Health Promotion through a Mediterranean diet educational toolkit for adults who are obese." Mrs. Shelly has organizational support and approval to conduct her project within our institution. We understand that for Mrs. Shelly to achieve completion of the DNP program, dissemination of the project will be required by the University, which will include a public presentation related to the project and a manuscript submission will be encouraged.

Our organization has deemed this project as Quality Improvement and not requiring institutional IRB review.

Thank you

Ben Leone
Office Manager

Integrative Physicians
3001 Academy Rd., #200
Durham, NC 27707
(919) 403-8600

Appendix O

Site Champion Agreement Letter

East Carolina University College of Nursing

Doctor of Nursing Practice Program

Form for Selection of Project Community Member

Student: Erica Shelly Banner ID: B01155141Lead Faculty Member: Carol King

The above-named student in the Doctor of Nursing Practice program, has selected the following person as the community member/content expert/site champion of the DNP Project:

Name/Credentials Dr. Janet Lehr, MDPosition Medical Doctor

Other Titles (if applicable): _____

This signature indicates agreement to serve as DNP Project Community Member for the above-listed student.

DNP Project Community Member: ..

Additional Team Members (optional)

Role	Name/Position/Role	Date/Signature
Member	Dr. Janet Lehr, MD	
Member	Shana Brye, FNP-BC	
Member		

APPROVAL

This signature indicates the person selected is approved to serve as the above named student's DNP project community member.

Director of DNP Program: _____

Signature and Date

Appendix P

IP Healthcare Provider Script

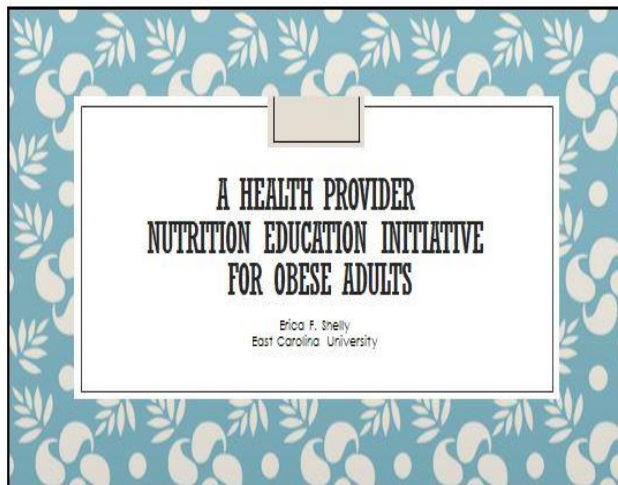
Nutrition Education Toolkit

Provider Script

To support you on your journey to a healthier weight, I will be providing you with a nutrition education toolkit. The toolkit will be composed of education on the Mediterranean diet, healthy eating suggestions, a Mediterranean diet grocery shopping list, recipe samples, instructions on reading nutrition labels and a blank food diary template to help you track what you are eating. I hope that the information in this toolkit will influence lifestyle changes that will help you eat a healthier diet and get to a healthier weight. This is a journey towards a healthier lifestyle and I will be here to support you along the way.

Appendix Q

Project Site Staff Educational Power-point



Significance of Obesity

- **Global Impact:** In 2014, more than 2.1 billion people, which was nearly 30% of the global population, were overweight or obese and 5% of the deaths worldwide were attributable to obesity (Dobbs et al., 2014).
- If this continues at this rate, almost half of the world's adult population will be overweight or obese by 2030 (Dobbs et al., 2014).
- **National Impact:** More than one-third, or 36.5%, of U.S. adults are obese (Centers for Disease Control and Prevention [CDC], 2018).
- Obesity-related conditions include heart disease, stroke, type 2 diabetes, and certain types of cancer, which are some of the leading causes of preventable death (CDC, 2018).
- In the U.S., the estimated annual medical cost of obesity was \$147 billion in 2008 and the medical costs for people who have obesity were \$1,429 higher than those of normal weight (CDC, 2018).

Quality Improvement

- The desired overall outcome of the East Carolina University's Doctor of Nursing Practice (DNP) Quality improvement (QI) project will be to establish an efficient and consistent process for how Integrative Physicians (IP) healthcare providers manage obese adults through addressing obesity with nutrition education.
- **Personal Goal:** The goal of this project is to provide a positive impact on the community through promoting nutritional awareness and improving dietary habits.

Significance of Obesity at IP

Patient ID	BMI	Age	Obesity ICD-10 code entered	Dietary counseling ICD-10 entered	Nutrition education provided
1	TL	33	44	No	No
2	AY	37.4	22	No	No
3	AC	32.6	21	No	No
4	AA	40.7	35	No	No
5	JAM	34.5	51	Yes	No
6	AP	33.3	40	No	No
7	AK	39.9	39	No	No
8	AF	34.9	42	No	No
9	AK	31.8	49	Yes	No
10	AE	35.1	31	No	No
11	BB	32.3	56	Yes	No
12	BA	31.3	60	No	No
13	RL	34	39	No	Yes
14	BP	43.8	32	Yes	Yes
15	BI	30.2	63	No	No
16	BC	50.4	62	Yes	Yes
17	BP	33.7	61	No	No
18	BL	47.4	55	No	No
19	CC	34.4	25	No	No
20	CY	38.2	61	Yes	No

Nutrition Education as a Solution

YOU ARE THE SOLUTION!

- A recent article highlighted how nutrition education was helpful in improving the consumption frequency of antioxidant-rich fruits and vegetables among overweight and obese adults (Wagner, Rhee, Horroth, Blodgett Salafia & Terlizzi, 2016).
- The Mediterranean style diet (MSD) has been widely reported to be associated with a favorable health outcome and a better quality of life (Sofi, Macchi, Abbate, Gensini & Casini, 2014).
- In addition, a randomized clinical trial involving telephone counseling on the MSD found a statistical significant amount of weight loss, while increasing fruit and vegetable intake which allowed them to conclude that education on the MSD was useful for both improving diet quality and for achieving a modest weight loss in overweight or obese individuals. (Sidahmed et al., 2014).
- Researchers provided measures of population impact in cardiovascular prevention and estimated that 19,375 cases of cardiovascular death would be prevented each year by promoting the MSD (Martinez-Gonzalez, 2016).
- In addition, recent evidence also suggests that adopting a MSD may help prevent type 2 diabetes, in addition to providing HbA1c reduction in persons with known diabetes (Esposito & Giugliano, 2014).

DNP QI Project

• WHEN

• Project Time Line: August to November 2018

- August 31, 2018- IP Providers begin using the toolkit to educate obese adults
- September 6, 2018- Erica will begin concurrent chart audit
- September 19, 2018- Staff Meeting with available providers to discuss chart audit results, pro/cons of toolkit; Improvements made based on suggestions.
- September 24, 2018- Erica will complete concurrent chart audit
- October 1, 2018- Staff Meeting with available providers to discuss chart audit results, pro/cons of toolkit; Improvements made based on suggestions.
- October 12, 2018- Erica will complete concurrent chart audit
- October 15, 2018- Staff Meeting with available providers to discuss chart audit results, pro/cons of toolkit; Improvements made based on suggestions.
- October 24, 2018- Erica will complete concurrent chart audit
- October 29, 2018- Staff Meeting with available providers to discuss chart audit results, pro/cons of toolkit; Improvements made based on suggestions.
- November 12, 2018- Final meeting and project evaluation

DNP QI Project

• WHO

• Primary Population: IP Medical Staff

- Target Patient population: The target population requiring nutrition education are adults over age 18 years that are categorized as obese with BMI's greater than or equal to 30 who present to IP clinic for an annual exam or to establish care.

• WHAT

- Healthcare Providers (HCPs) Role: Provide nutrition education by using the toolkit to educate all obese adult patients that present to the clinic for an annual exam or to establish care.
- Medical Assistants (MA) Role: Obtain and document patient age, height, weight and body mass index.

DNP QI Project

• HOW

- The project will be evaluated with the following criteria:

	Patient ID	BMI	Age	Obesity ICD-10 code entered	Dietary counseling ICD-10 entered	Nutrition education provided
1	TL	33	44	Yes	Yes	Yes
2	AV	37.4	22	Yes	Yes	Yes
3	AC	32.6	21	Yes	Yes	Yes
4	AA	40.7	35	Yes	Yes	Yes
5	AM	34.5	51	Yes	Yes	Yes
6	AP	33.3	40	Yes	Yes	Yes
7	AK	39.9	39	Yes	Yes	Yes
8	AI	34.9	42	Yes	Yes	Yes
9	AK	31.8	49	Yes	Yes	Yes
10	AI	35.1	31	Yes	Yes	Yes
11	BB	32.3	36	Yes	Yes	Yes
12	BA	31.3	60	Yes	Yes	Yes
13	BL	34	39	Yes	Yes	Yes
14	BP	43.8	32	Yes	Yes	Yes
15	BI	30.2	63	Yes	Yes	Yes
16	BC	50.4	62	Yes	Yes	Yes
17	BP	33.7	61	Yes	Yes	Yes
18	BL	47.4	35	Yes	Yes	Yes
19	CC	34.4	25	Yes	Yes	Yes
20	CY	38.2	61	Yes	Yes	Yes

HCPs Script

- To support you on your journey to a healthier weight, I will be providing you with a nutrition education toolkit. The toolkit will be composed of education on the Mediterranean diet, healthy eating suggestions, a Mediterranean diet grocery shopping list, recipe samples, instructions on reading nutrition labels and a blank food diary template to help you track what you are eating. I hope that the information in this toolkit will influence lifestyle changes that will help you eat a healthier diet and get to a healthier weight. This is a journey towards a healthier lifestyle and I will be here to support you along the way.

References

- Centers for Disease Control and Prevention, (CDC). (2018). *Adult obesity facts*. Retrieved from <https://www.cdc.gov/obesity/data/adult.html>
- Centers for Disease Control and Prevention, (CDC). (2016). *Defining Adult Overweight and Obesity*. Retrieved from <https://www.cdc.gov/obesity/adult/defining.html>
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- Centers for Disease Control and Prevention, (CDC). (n.d.). *My food diary*. Retrieved from https://www.cdc.gov/healthyweight/pdf/food_diary_cdc.pdf
- Dobbs R., Sawers C., Thompson F., Manyika J., Woetzel J.R., Child P., McKenna S., Spatharou A. (2014). *Overcoming Obesity: An Initial Economic Analysis*. McKinsey Global Institute, Jakarta, Indonesia.

Nutrition Education Toolkit

- Review Nutrition Education Toolkit sample provided.

References

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- Martínez-González, M. A. (2016). Benefits of the mediterranean diet beyond the mediterranean sea and beyond food patterns. *BMC Medicine*, (14)1, 157. doi:10.1186/s12916-016-0714-3
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- Sofi, F., Macchi, C., Abbate, R., Gensini, G. F., & Casini, A. (2014). Mediterranean diet and health status: An updated meta-analysis and a proposal for a literature-based adherence score. *Public Health Nutrition*, (17)12, p. 2769-2782. doi:10.1017/S1368980013003169
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Appendix R

Pre-project Implementation Patient Chart Audit Results and Meeting Minutes

Date: August 21, 2018

Meeting began: August 21st, 2018 12:30 pm

Attendees

- Megan P., PA-C
- Shana B., FNP-BC
- Robbie B., MA
- Susan J., MA
- Fiona G., MA

Agenda

- Item 1: DNP QI Project Staff Education- PowerPoint provided
- Item 2: Results of baseline patient chart audit
- Item 3: Project expectations and outcomes

Next steps

- All Integrative Physician providers will begin implementing the QI project August 31st, 2018.
- Erica will post project reminders near provider work stations and place Mediterranean diet posters in patient rooms by close of business today.
- Erica will complete concurrent patient chart audits over the next two weeks.
- Next Staff Meeting will be held September 17th, 2018 at 12:30pm

Meeting ended: August 21st, 2018 1:15 pm

August 21, 2018: Baseline Chart Audit Results

	Patient ID	BMI	Age	Obesity ICD-10 code entered	Dietary counseling ICD-10 entered	Nutrition education provided
1	TL	33	44	No	No	No
2	AV	37.4	22	No	No	No
3	AC	32.6	21	No	No	No
4	AA	40.7	35	No	No	No
5	AM	34.5	51	Yes	No	Yes
6	AP	33.3	40	No	No	No
7	AK	39.9	39	No	No	No
8	AF	34.9	42	No	No	No
9	AK	31.8	49	Yes	No	No
10	AE	35.1	31	No	No	No
11	BB	32.3	56	Yes	No	No
12	BA	31.3	60	No	No	No
13	BL	34	39	No	No	Yes
14	BP	43.8	32	Yes	No	Yes
15	BJ	30.2	63	No	No	No
16	BC	50.4	62	Yes	No	Yes
17	BP	33.7	61	No	No	No
18	BL	47.4	55	No	No	No
19	CC	34.4	25	No	No	No
20	CY	38.2	61	Yes	No	No
21	CS	32.6	44	Yes	No	No
22	CH	34.9	34	Yes	Yes	Yes
23	CW	42.1	57	Yes	No	No
24	CS	35.2	42	Yes	No	Yes
25	CS	34.5	49	No	No	Yes
26	DT	31	49	Yes	No	No
27	DT	31.8	52	Yes	No	No
28	DS	34.3	56	No	No	No
29	DM	37.2	63	No	No	No
30	EF	31.2	31	No	No	Yes
31	EA	37.1	65	No	No	No
32	EG	32.2	51	Yes	No	No
33	EF	34	31	Yes	No	Yes
34	EF	38.1	64	No	No	No
35	FD	37.1	54	No	No	No
36	FD	31.3	60	Yes	No	No
37	FB	32	46	Yes	No	No
38	GV	35	50	No	No	Yes
39	HO	34.7	50	No	No	No
40	IW	34.8	46	Yes	No	Yes
41	JC	46.5	27	No	No	No
42	JB	41.7	58	No	No	Yes
43	JS	33.7	57	Yes	No	No
44	JK	35.7	53	Yes	No	No
45	JA	31.7	55	No	No	No
46	JB	30.4	37	No	No	No
47	JC	37.1	56	No	No	No
48	JG	32.2	41	No	No	No
49	JG	32.6	55	Yes	No	No
50	JS	31.6	57	No	No	No

51	JS	33.2	32	Yes	No	Yes
52	JS	35.8	21	Yes	No	Yes
53	JD	30.6	57	Yes	No	Yes
54	KG	33.3	41	No	No	No
55	KJ	30.9	53	No	No	No
56	KM	31.6	61	Yes	No	Yes
57	KR	62.1	54	No	No	No
58	LP	38.5	42	Yes	No	Yes
59	LC	44	46	No	No	Yes
60	LM	31.4	22	No	No	Yes
61	LW	36.9	48	No	No	No
62	MP	35	50	No	No	No
63	MM	41.8	46	Yes	No	Yes
64	MS	34	38	No	No	No
65	MT	46.2	57	No	No	No
66	ML	30.2	36	No	No	No
67	MM	30.9	45	No	No	No
68	MW	31.6	59	No	No	No
69	MW	30.4	61	No	No	No
70	MK	32.6	31	Yes	No	No
71	MD	36.8	40	No	No	No
72	MP	54.6	37	Yes	No	Yes
73	MW	32.6	23	No	No	Yes
74	MR	32.3	65	No	No	No
75	NV	35.6	58	Yes	No	No
76	NH	32.9	23	No	No	No
77	NE	37.1	40	No	No	No
78	NB	31.2	46	Yes	No	No
79	PH	30.4	36	No	No	No
80	PW	40.5	63	No	No	No
81	PR	36.3	40	Yes	No	Yes
82	PS	32.4	62	No	No	No
83	PW	42.6	56	No	No	No
84	QW	37.2	34	No	No	No
85	RS	40.4	51	No	No	No
86	RR	43.9	40	Yes	No	No
87	RB	31.3	60	No	No	No
88	RJ	32.9	61	No	No	No
89	RD	30.4	65	No	No	No
90	SK	31.8	37	No	No	No
91	SB	32.5	39	No	No	No
92	SF	33.8	59	No	No	No
93	SB	34.5	33	No	No	No
94	SB	34.9	47	No	No	Yes
95	SJ	31	55	No	No	Yes
96	SW	33.1	65	No	No	No
97	SL	32.5	61	No	No	No
98	SG	30.7	52	No	No	Yes
99	TC	50.8	37	Yes	No	Yes
100	TW	37.6	50	No	No	No
Totals:				Yes: 33 %	Yes: 1 %	Yes: 27 %
				No: 67 %	No: 99 %	No: 73 %

Appendix S

First Biweekly Patient Chart Audit Results and Meeting Minutes

Date: September 17th, 2018

Meeting began: September 17th, 2018 12:35 pm

Attendees

- Megan P., PA-C
- Shana B., FNP-BC
- Janet L., MD
- Amy C., MD
- Robbie B., MA
- Susan J., MA
- Fiona G., MA

Agenda

- Item 1: Efficacy and efficiency of Nutrition Education toolkit
- Item 2: Results of First Post Implementation patient chart audit
- Item 3: Pros and Cons of DNP QI Project process

Next steps

- All Integrative Physician providers will continue implementing the QI project over the next two weeks.
- Erica will complete concurrent patient chart audits over the next two weeks.
- Next Staff Meeting will be held October 1st, 2018 at 12:30pm

Meeting ended: September 17, 2018 1:00 pm

Results for 08/31/18 to 09/16/18				Concurrent Chart Audit Results		
Patient ID	Age	BMI	Obesity ICD-10 code entered E66.9	Dietary counseling ICD-10 entered Z71.3	Nutrition education provided	
1	JB	22	34	Yes	Yes	Yes
2	SC	45	32	No	No	No
3	MP	44	30.1	Yes	Yes	Yes
4	DB	59	30.2	No	No	Yes
5	GJ	30	30.5	Yes	Yes	Yes
6	JH	30	31.4	No	No	Yes
7	CR	57	32.8	Yes	Yes	Yes
8	GK	55	42.4	Yes	No	Yes
9	RM	52	35.5	Yes	Yes	Yes
10						
11						
12						
13						
14						
15		Totals:	Yes: 66.7%	Yes: 54.5 %	Yes: 88.9 %	
16			No: 33.3 %	No: 45.5%	No: 11.1%	

Appendix T

Second Biweekly Patient Chart Audit Results and Meeting Minutes

Date: October 1st, 2018Meeting began: October 1st, 2018 12:40 pmAttendees

- Shana B., FNP-BC
- Janet L., MD
- Amy C., MD
- Robbie B., MA
- Susan J., MA
- Fiona G., MA

Agenda

- Item 1: Results of Second Post Implementation patient chart audit
- Item 2: Technology Failure that slowed Productivity last week
- Item 3: Pros and Cons of DNP QI Project process
- Item 4: Suggestions
 - Implementing a HCP personalized report card with each provider personal progress

Next steps

- All Integrative Physician providers will continue implementing the QI project over the next two weeks.
- Erica will complete concurrent patient chart audits over the next two weeks including HCPs report card.
- Next Staff Meeting will be held October 15th, 2018 at 12:30pm

Meeting ended: October 1st, 2018 1:10 pm

Results for 9/17/18 to 09/30/18

October 1, 2018: Concurrent Chart Audit Results

	Patient ID	Age	BMI	Provider	Obesity ICD-10 code entered E66.9	Dietary counseling ICD-10 entered Z71.3	Nutrition education provided
1	LW	41	37.5	SB	Yes	Yes	Yes
2	TP	42	31.7	SB	No	No	No
3	YB	40	37.8	SB	Yes	Yes	Yes
4	LA	30	36.1	SB	Yes	Yes	Yes
5	JG	54	33.7	JL	No	No	No
6	JB	39	49.4	JL	Yes	Yes	Yes
7	JH	52	36.5	SB	Yes	Yes	Yes
10	ES	47	39.2	SB	Yes	Yes	Yes
11	CC	54	32.6	JL	Yes	No	Yes
10							
11							
12							
13							
14							
15			Totals:		Yes: 77.8%	Yes: 66.7%	Yes: 77.8%
16					No: 22.2 %	No: 33.3 %	No: 22.2 %

Appendix U

Third Biweekly Patient Chart Audit Results and Meeting Minutes

Date: October 15th, 2018Meeting began: October 15th, 2018 12:31 pmAttendees

- Shana B., FNP-BC
- Janet L., MD
- Amy C., MD
- Robbie B., MA
- Susan J., MA
- Fiona G., MA

Agenda

- Item 1: Results of Third Post Implementation patient chart audit with HCPs report cards
- Item 2: Inability to bill for Dietary counseling code Z71.3
- Item 3: Decrease patient volume secondary to Hurricane Michael
- Item 4: Efficiency of the education and documentation process
- Item 5: Suggestions
 - Feedback on the toolkit, "Patients love it."
 - More reminders would be helpful.

Next steps

- All Integrative Physician providers will continue implementing the QI project over the next two weeks.
- Erica will complete concurrent patient chart audits over the next two weeks including HCPs report cards.
- Erica will research billable dietary counseling code.
- Next Staff Meeting will be held October 29th, 2018 at 12:30pm

Meeting ended: October 15th, 2018 1:10 pm

Results for 10/1/18 to 10/14/18					October 15, 2018: Concurrent Chart Audit Results		
Patient ID	Age	BMI	Provider	Obesity ICD-10 code entered E66.9	Dietary counseling ICD-10 entered Z71.3	Nutrition education provided	
1 LT	48	40	JL	Yes	Yes	Yes	
2 QH	52	34.1	SB	Yes	Yes	Yes	
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15			Totals:	Yes: 100 %	Yes: 100 %	Yes: 100 %	
16				No: 0 %	No: 0 %	No: 0 %	

Appendix V

Fourth Biweekly Patient Chart Audit Results and Meeting Minutes

Date: October 29th, 2018Meeting began: October 29th, 2018 12:33 pmAttendees

- Shana B., FNP-BC
- Janet L., MD
- Amy C., MD
- Robbie B., MA
- Susan J., MA
- Fiona G., MA

Agenda

- Item 1: Results of Fourth Post Implementation patient chart audit with HCPs report cards
- Item 2: Final Overall results for DNP QI project
- Item 3: Overall Project Feedback
- Item 4: IP clinic closing

Next steps

- All Integrative Physician providers agreed to continue to use the toolkit to educate obesity adults.
- Project Evaluation form provided and should be returned via email.

Meeting ended: October 29th, 2018 12:58 pm

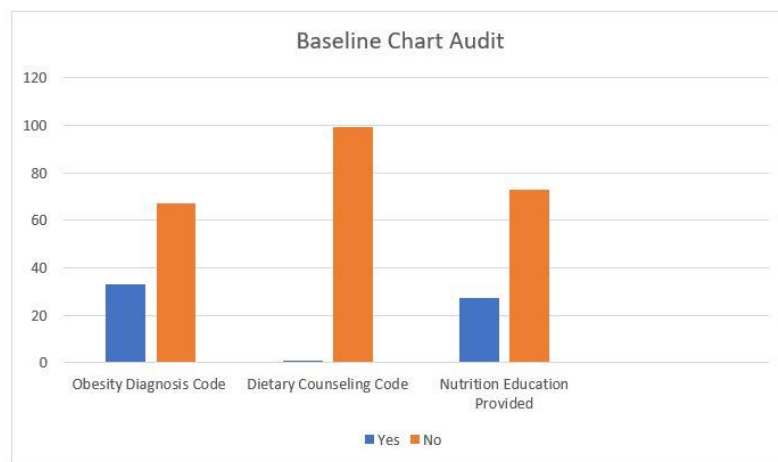
Results for 10/15/18 to 10/28/18					October 29, 2018: Concurrent Chart Audit Results		
Patient ID	Age	BMI	Provider	Obesity ICD-10 code entered E66.9	Dietary counseling ICD-10 entered Z71.3	Nutrition education provided	
1	AD	25	33.1	JL	No	No	No
2	JG	40	33.7	JL	Yes	Yes	Yes
3	JA	51	30.3	SB	Yes	Yes	Yes
4	MH	60	30.5	JL	No	No	No
5	PH	43	33.7	SB	Yes	Yes	Yes
6	TA	43	34	JL	Yes	Yes	Yes
7	TC	48	42.1	SB	No	No	Yes
8	VH	52	34.7	JL	Yes	No	No
9	WJ	56	31.6	JL	No	No	No
10	BH	55	39.1	SB	No	No	Yes
11	CH	60	39	AC	Yes	No	Yes
12							
13							
14							
15		Totals:			Yes: 54.5 %	Yes: 36.4 %	Yes: 63.6 %
16					No: 45.5 %	No: 63.6 %	No: 36.4 %

Appendix W

Baseline chart audit comparison to Overall chart audit average

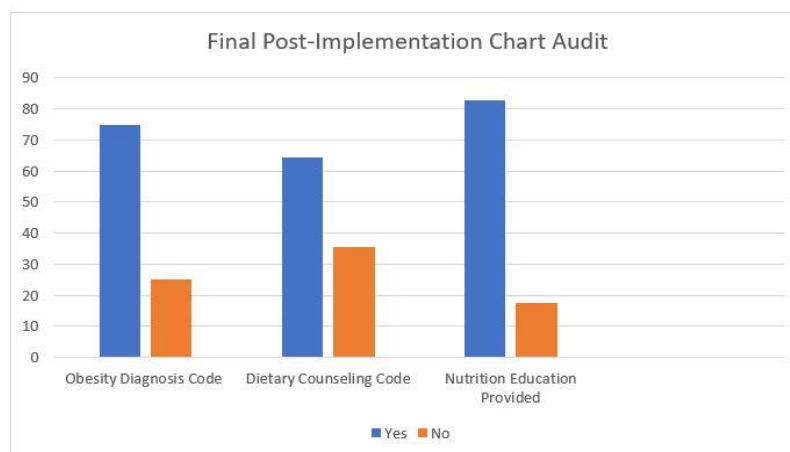
BASELINE PRE-IMPLEMENTATION AUDIT:

Obesity Diagnosis Code	Dietary Counseling Code	Nutrition Education Provided
YES: 33%	YES: 1%	YES: 27%
NO: 67%	NO: 99%	NO: 73%



OVERALL AVERAGE

Obesity Diagnosis Code	Dietary Counseling Code	Nutrition Education Provided
YES: 74.75%	YES: 64.4%	YES: 82.6%
NO: 25.25%	NO: 35.6%	NO: 17.4%



Appendix X

DNP QI Project Provider Evaluation Form

DNP QI Project Evaluation Form

Using the survey instrument below, please highlight one answer for each question.

Thank you for participating in this DNP QI project.

Facilitator: Erica Shelly

Date: 10/29/2018

IP Provider: Shana Byre, FNP-BC

The Student Facilitating the Project:

		Never	Rarely	Sometimes	Always
1	The facilitator delivered the project education and material in a clear and structured manner.	1	2	3	4
2	The facilitator was knowledgeable about the topic and any related issues.	1	2	3	4
3	The facilitator was enthusiastic about the topic.	1	2	3	4
4	The facilitator was well organized and prepared.	1	2	3	4
5	The facilitator actively provided support throughout the project process.	1	2	3	4

The DNP QI Project:

		Strongly Disagree	Disagree	Agree	Strongly Agree
1	The DNP QI project facilitated a positive practice change.	1	2	3	4
2	The DNP QI project toolkit contained practical examples and useful techniques.	1	2	3	4
3	IP patients were receptive to the information in the toolkit.	1	2	3	4
4	The toolkit made providing education more efficient.	1	2	3	4
5	I would recommend this DNP QI project be implemented in other primary care settings.	1	2	3	4

DNP QI Project Evaluation Form

Using the survey instrument below, please circle one answer for each question.

Thank you for participating in this DNP QI project.

Facilitator: Erica Shelly

Date: 10/29/2018

IP Provider: Janet Lehr, MD

The Student Facilitating the Project:

		Never	Rarely	Sometimes	Always
1	The facilitator delivered the project	1	2	3	4

	education and material in a clear and structured manner.				
2	The facilitator was knowledgeable about the topic and any related issues.	1	2	3	4
3	The facilitator was enthusiastic about the topic.	1	2	3	4
4	The facilitator was well organized and prepared.	1	2	3	4
5	The facilitator actively provided support throughout the project process.	1	2	3	4

The DNP QI Project:

		Strongly Disagree	Disagree	Agree	Strongly Agree
1	The DNP QI project facilitated a positive practice change.	1	2	3	4
2	The DNP QI project toolkit contained practical examples and useful techniques.	1	2	3	4
3	IP patients were receptive to the information in the toolkit.	1	2	3	4
4	The toolkit made providing education more efficient.	1	2	3	4
5	I would recommend this DNP QI project be implemented in other primary care settings.	1	2	3	4

